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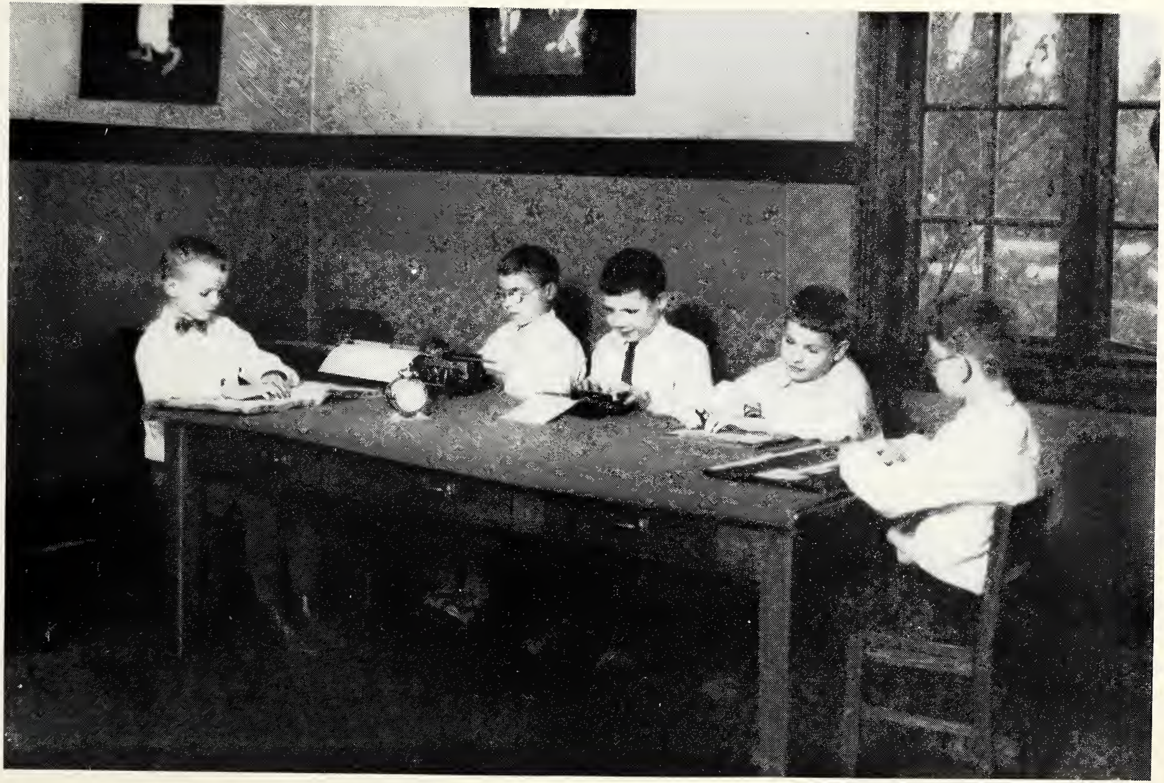

Blind Boys Learning to Read and Write

PROBLEMS IN THE EDUCATION OF VISUALLY HANDICAPPED CHILDREN

BY

RALPH VICKERS MERRY

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Dayton, Ohio

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PREFACE

The material contained in this book was presented originally to the Faculty of the Graduate School of Education, Harvard University, as a thesis in partial fulfilment of the requirements for the degree of Doctor of Education in March, 1932.

The writer wishes to acknowledge his indebtedness to Dean Henry W. Holmes of the Harvard Graduate School of Education for his guidance in the preparation of the manuscript, and to Professor Walter F. Dearborn, also of the Harvard Graduate School of Education, for reading the entire first draft and making a number of valuable suggestions. Sincere thanks also are due to Mr. Lewis H. Carris, Mrs. Winifred Hathaway, Dr. B. Franklin Royer and other staff members of the National Society for the Prevention of Blindness who read critically Chapters I, VI, and parts of Chapter XII; to Dr. Edward E. Allen, Director Emeritus of Perkins Institution and Massachusetts School for the Blind, who read Chapter II; to Dr. Olin H. Burritt, Principal of the Pennsylvania Institution for the Instruction of the Blind, who read Chapters III, IV, VII, VIII, and IX; to Dr. Thomas D. Cutsforth of the University of Kansas, who read Chapter X; and to Mr. George F. Meyer, Supervisor of Braille and Sight-Saving Classes in the Minneapolis public schools, who read Chapter V. The writer also is indebted to Miss Helen J. Coffin, Supervisor of Braille and Sight-Saving Classes in the Cleveland public schools, who supplied the photograph of a typical sight-saving classroom; to Dr. Arnold Gesell of Yale University through whose courtesy it was possible to use the lithograph of *The Blind Beggar;* to the White House Conference on Child Health and Protection and the Century Company for permission to reproduce Figure 1, showing the total school enrolment in the United States classified according to visual capacity; to Miss Ida Mae Magoon of Manchester, N. H., who made the original drawing of the human eye; and to Perkins Institution, Watertown, Massachusetts, for permission to reproduce the photographs showing blind children learning to read and write, and blind girls learning to skate. Thanks also are due to Professor Bertha K. Duncan of the Texas State College for Women who permitted the writer to read her unpublished manuscript on the maze-learning ability of the blind, and to the American Foundation for the Blind, Inc., New York, for its courtesy in loaning the unpublished reports of the sub-committee on the visually handicapped, 1930 White House Conference on Child Health and Protection. Finally, the writer wishes to thank his wife, Dr. Frieda Kiefer Merry, for her untiring assistance in reading and rereading the drafts, checking references, and making many helpful criticisms.

RALPH VICKERS MERRY

Cambridge, Massachusetts,
September, 1932.

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PROBLEMS IN THE EDUCATION OF VISUALLY HANDICAPPED CHILDREN

CHAPTER I

PRELIMINARY CONSIDERATIONS

Nature and Scope of the Present Study.—The systematic education of visually handicapped children in the United States is now entering upon its second century and it seems an opportune time, therefore, to attempt an evaluation of what has been accomplished and to indicate some of the problems which as yet are unsolved. The present study is intended to perform these functions, in so far as it is possible, with regard to the elementary education of blind and partially seeing children. It is not, primarily, an historical study, but in order to supply a background for the discussion of various problems considerable historical material is included. The following chapter presents a brief summary of the evolution of educational facilities for visually handicapped children, and in subsequent chapters such historical facts are included as will promote a clearer understanding of the problems under consideration.

The policy of discussing both blind and partially seeing children in the same chapters, which has been followed generally, may be objected to by some leaders engaged in sight-saving work. In a treatise concerned with pedagogical methods and devices this objection probably would be justified, but in the present study, which deals with broad educational issues, there seems to be no valid reason why the problems of blind and partially seeing children cannot be treated together, especially since this saves considerable repetition.

The topics discussed herein are principally those concerned with pre-school, kindergarten, and elementary education, although the serious academic retardation of visually handicapped children generally makes it necessary to include certain problems, such as those of adolescence, which ordinarily would belong in the secondary field. Problems arising in connection with the secondary and higher education, and vocational training of the visually handicapped are, in themselves, of sufficient importance to merit separate treatment and cannot be dealt with adequately within the limits of the present study.

In formulating and discussing problems in the elementary education of visually handicapped children, the aim is to introduce material of as objective a nature as possible, excluding that which obviously results from prejudice or emotionalism. A surprising amount of literature has accumulated during the past century, but, unfortunately, much of it is of doubtful scientific value, especially that dealing with the education of blind children. Nor is the distinction between "literature of fact" and "literature of opinion" made by some writers, a sufficient basis for judging the value of material in this field. Sound opinion, founded upon many years of experience and unprejudiced observation, certainly is preferable to incomplete experimental data obtained by individuals lacking adequate training and experience. While as many reliable experimental data as possible are included in this study, sound observational and opinionative literature, also, are employed.

It is hoped that the annotated bibliography which is appended will prove helpful to students and teachers interested in this particular phase of special education. While many bibliographies have been published, none appears to have been annotated, and since in some of these considerable repetition and worthless material are included, this lack of discrimination has wasted the time and diminished the interest of those desiring to study the visually handicapped. The titles included in this bibliography are chosen not only because they are representative of the problems considered, but also because of their availability. Much of the literature concerning the visually handicapped is widely scattered and relatively inaccessible to the average student or teacher; therefore, unless such references are of particular value, they are not included in the bibliography of this book, but are summarized as completely as possible at the point where they are introduced into the general text. Only a few foreign titles are mentioned, which are easily available and contribute directly to the discussion.

The aim of the present study is to formulate and discuss fundamental problems relating to the education of visually handicapped children and to point out those places where further knowledge is required. In some instances specific suggestions for experimentation are made, not with the idea of presenting finished and complete research techniques, but rather of stimulating research workers to attempt such investigations. No final solutions for any problems are offered, but tentative conclusions are drawn from available facts, and suggestions for changes and improvements in certain existing practices are proposed. Throughout the study a comparison is made between the principles and theories underlying the education of the visually handicapped and those now most commonly accepted in the field of general education. It is hoped, thus, to show the difference in rate of progress between these two branches of education, and to point out the need for revision of the aims and theories governing the former.

The immediate purposes of this study, therefore, are:

(1) To clear the ground for further research and progress in the elementary education of visually handicapped children, pointing out the most fundamental problems requiring solution, and offering suggestions for their investigation;

(2) To assist teachers of visually handicapped children to clarify their educational theories and objectives; and

(3) To interest research workers from the field of general education in the study of problems peculiar to the visually handicapped.

Definitions.—"The term *blindness*," says Baldwin,[1] "is a most general one designating any distinct lack of power to respond to the stimuli which give rise to vision. It may be partial or total, and may be due to injuries or deficiencies in any part of the optical mechanism, accessory to the retina, in the retina itself, in the optic nerve, in the cortical or subcortical centers for vision or in the connections between these." Other less technical definitions of blindness have been formulated, e.g., "vision from about one-third to one-tenth of normal with the best glasses obtainable,"[2]

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[1] Baldwin, J. M., *Dictionary of Philosophy and Psychology,* I. Macmillan Company, New York, 1901, p. 122.

[2] Consult page 6 of "Report of the Massachusetts Commission for the Blind on the Condition and Education of Persons with Seriously Defective Eyesight" (House Bill No. 2145), *Outlook for the Blind,* VIII, Summer, 1914.

"sight worse than 3/60,"[3] and "the inability to count fingers at one foot."[4]

In deciding whether or not an individual is blind, factors other than his actual amount of vision should be taken into account. Thus, economic blindness may not represent the same degree of visual acuity as educational blindness. The former includes those whose vision is too defective to allow them to perform work for which eyesight is essential,[5] while the latter applies to children who cannot use their eyes for educational purposes. Obviously, there may be wide differences in the amount of sight required in certain industrial occupations and that necessary for the ordinary process of education. Thus, a child who may not be considered blind educationally may be so regarded industrially. Since the present discussion is concerned with the education of visually handicapped children rather than with their economic status, it is necessary only to establish educational definitions of the terms *blind* and *partially seeing.*

In 1928 a special committee of the American Association of Instructors of the Blind, which had been appointed to formulate a satisfactory definition of blindness for educational purposes, favored that employed by the United States Census Bureau, viz., "A blind person is one who cannot see to read a book or other printed matter even with the aid of glasses."[6] This definition appears to be fairly satisfactory and coincides quite closely with that used by the Committee on the Visually Handicapped of the 1930 White House Conference, viz., a blind child is "one who cannot use his eyes for education."[7]

The difference between blindness and partial vision is not always easy to distinguish,[8] since types of ocular defects and other factors have to be considered. For example, a child possessing considerable vision but who is destined to lose his sight despite the best ophthalmological care might better be educated in a school for the blind rather than in a sight-saving class. In general, visual acuity of 20/200 (as measured by the Snellen Chart[9]) seems to represent the dividing line between the blind and the partially seeing, while vision of 20/70 divides sight-saving class pupils from those who can be educated in the regular grades. In this connection Wood says:[10]

---

[3] Anon., "Blindness: Border-Line Cases," *The Beacon,* XI, February, 1927, p. 15.

[4] Robinson, E. B. T., *True Sphere of Blind,* William Briggs, Publisher, Toronto, 1896, p. 15.

[5] Anon., *The Beacon,* XI, June, 1927, pp. 3-4.

[6] "Report of Committee on Definition of Blindness," *A. A. I. B. Proceedings,* 1928, p. 433.

[7] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 1.

[8] Consult Appendix 3 (relative to the definitions of blindness in different countries), League of Nations Health Organization, *Report on the Welfare of the Blind in Various Countries,* pp. 84-90.

> In general, with the exception of children suffering from progressive eye troubles, children with 20/70 vision or over, in the better eye after correction or treatment, can usually carry on their work profitably in the regular grade. Children with 20/200 vision or less after correction or treatment, are considered blind and should be educated as finger readers in a school or class for the blind.
>
> Children falling between these two extremes plus all children with progressive eye troubles should be considered potential candidates for sight-saving classes. Although it is wise to have certain standards of admission, each child must be given individual consideration.

The impression should not be gained, however, that the distinctions between blind, partially seeing, and visually normal children outlined by Wood are followed generally in actual practice. Ophthalmological standards for admission to sight-saving classes vary widely in different communities, and this lack of uniformity recently has received sharp criticism.[11] As will be seen in a subsequent chapter, also, many pupils in schools for the blind possess far too much vision to be educated by means of tactual methods.

---

[9] The Snellen Chart consists of definitely graduated letters or groups of letters which should be read by the normal eye at distances varying from 10 to 200 feet. If an individual can read the 20-foot line at a distance of 20 feet, his visual acuity is considered normal, and is written 20/20. If, however, he can read only the 70-foot line at a distance of 20 feet, his visual acuity is rated 20/70, and if he can read only the 200-foot line at 20 feet, it is 20/200. Although written in the form of a fraction, these figures do *not* represent fractional values. Thus 20/20 is equivalent to 100 per cent visual efficiency; 20/30 equals 91.5 per cent; 20/40 equals 83.6 per cent; 20/50 equals 76.5 per cent; 20/70 equals 64 per cent; 20/100 equals 48.9 per cent, and 20/200 equals 20 per cent. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 129.

[10] Wood, Thomas D., *Conserving the Sight of School Children,* p. 48.

[11] Wallin, J. E. W., "The Ratio of Candidates for Sight Conservation Classes," *School and Society,* XXXIII, January 10, 1931, pp. 66-67.

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Despite this general lack of uniformity, however, it is necessary for the sake of clarity to attach fairly definite meaning to the terms *blind* and *partially seeing*. Throughout the present study, therefore, a blind child is considered as one whose vision, after correction, is insufficient to permit him to be educated by visual methods, while a partially seeing child is considered as one whose vision is too defective to allow him to be educated satisfactorily and with safety in the regular school grades, but who can make use of specially adapted visual methods. Although no rigid line of separation can be drawn between these two groups, the point where visual education ends and tactual education begins appears to be as suitable a basis for division as any other, especially from an educational point of view.

It is realized that no single definition of each group can cover all cases adequately. Exceptions always occur and must be dealt with according to individual requirements. It is believed, nevertheless, that the general definitions herein set up will serve for the majority of children with serious ocular defects, and that they will promote a clear understanding of the problems to be discussed in succeeding chapters.

Incidence of Visual Defects in the School Population.—The incidence of serious visual handicaps among school children in the United States is somewhat difficult to determine accurately. It is a comparatively simple matter, of course, to ascertain the number of pupils enrolled in residential institutions and public day-school classes, but there is good reason to believe that only a relatively small proportion of the total number of these children is receiving instruction under the above-mentioned auspices. Census returns have not proved to be a very reliable basis for estimating the incidence of blindness among children, since parents frequently feel that it is a disgrace to admit that such a child is a member of their family, and fail to report him to the enumerator. It also should be borne in mind that visual defects are much more common among individuals of advanced years[12] than they are among children.

The most recent estimates show that there are approximately 14,400 blind children in this country under twenty years of age. Of these, 6,000 are being educated in state, private, or public day schools and classes.[13] These figures include both elementary and secondary pupils, and, although there is no definite information concerning the number of elementary pupils alone, it undoubtedly is considerably smaller. The extremely wide age ranges found in most elementary grades in schools for the blind make it practically impossible to separate elementary from secondary pupils on the basis of age alone. In comparison with the incidence of other physical defects, such as deafness, the incidence of blindness among school children may seem very small. It may be thought that the existence of so few cases does not merit special attention. It should be remembered, however, that large sums of public money are expended annually in this country on the education of children without sight and it is only fair that these funds should be used to the best possible advantage. Furthermore, in a democratic society, the fact that a certain handicapped group is in the minority cannot be advanced as a valid reason for denying to its members opportunities for the best individual and social development of which they are capable.

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[12] Best, Harry, *The Blind*, pp. 9-10.

It has been estimated that there are 50,000 partially seeing children in the United States who should be in sight-saving classes. Less than 5,000 of these, however, are enrolled in such classes.[14] This points to the need for further expansion of sight-saving work, and to the general acceptance of its importance in all cities, towns, and rural areas throughout the country.

Figure 1 shows approximately the relative number of children with normal vision, those with correctible visual defects, those eligible for sight-saving classes, and those who should be educated in schools and classes for the blind.[15] The section at the base of the triangle represents those school children whose vision is normal; the next section shows those

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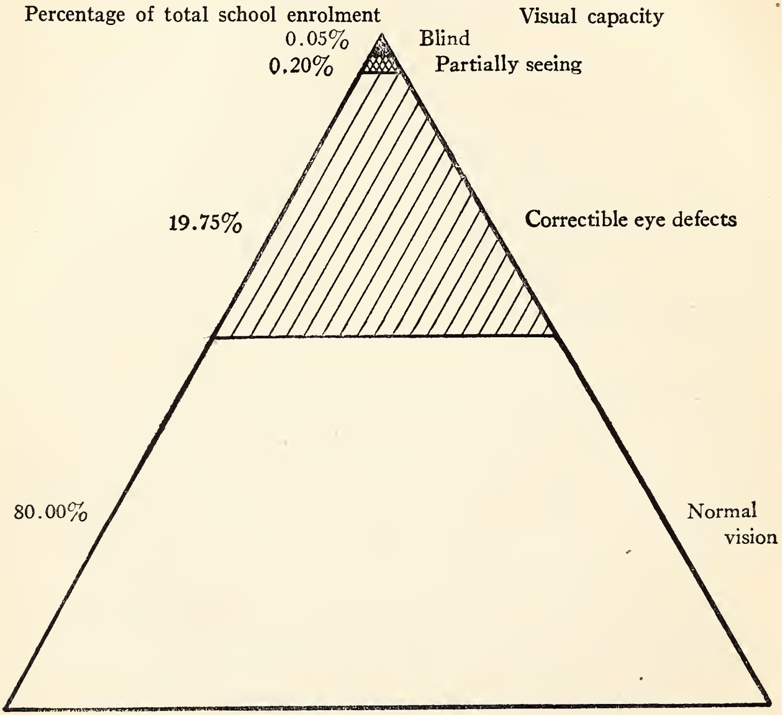
[13] "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection,* p. 232.

[14] *Ibid.,* p. 233.

[15] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 127. This figure is reproduced by courtesy of the White House Conference on Child Health and Protection, and the Century Company.

FIGURE 1

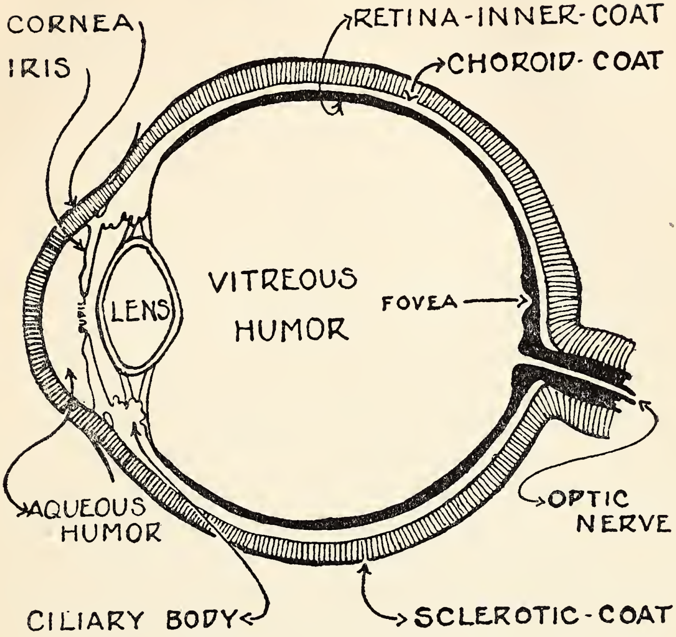
TOTAL SCHOOL ENROLMENT IN THE UNITED STATES CLASSIFIED BY VISUAL CAPACITY



children with correctible eye defects; above this is the section which illustrates the number of partially seeing children; and the section at the apex of the triangle represents the number of children who are blind.

This diagram presents a much clearer picture of the incidence of visual handicaps in the school population than can be obtained through comparison of available figures. It emphasizes again the smallness of the number of visually handicapped children as contrasted with the total school population, a fact which should be highly gratifying to educators, medical men, and social workers. Nevertheless, the problems arising with this numerically insignificant group are not to be dismissed lightly, but should receive careful consideration in

FIGURE 2
THE HUMAN EYE



order to provide the best possible means for these individuals to lessen their handicaps and become normal members of society.

The Human Eye.—Before discussing some of the more common visual defects it may be helpful to present a brief, non-technical description of the human eye. This description does not include all structural details, but the facts presented should enable the general reader to gain an intelligent understanding of the visual mechanism. If further information is desired, standard works on ophthalmology should be consulted.[16-18]

The human eye is almost spherical in shape, about one

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[16] Posey, William C., *Hygiene of the Eye,* pp. 1-11.

[17] Lewis, F. Park, *What Every One Should Know About Eyes,* pp. 1-7.

[18] Kerr, James, *School Vision and the Myopic Scholar,* Chap. I.

inch in diameter. Its outer covering is a tough protective membrane known as the sclerotic coat. (See Figure 2) At the front of the eyeball this outer covering is modified into a transparent membrane known as the cornea, which also increases slightly in convexity. The middle coat of the eyeball is known as the choroid, which, in front, becomes the iris, a muscular shutter, the back of which contains much pigment. In the center of the iris there is a small hole known as the pupil whose size is regulated by the expansion and contraction of the iris, thus largely controlling the amount of light admitted to the inner eye. Directly behind the pupil is the crystalline lens, of double convex form, composed of a fairly firm jelly-like substance with an outer cover known as the lens capsule. The ciliary body or accommodation muscle makes possible the increase or decrease in the convexity of the lens, the function of which is to focus the image of objects on the retina. The retina lines the posterior two thirds of the eyeball; it is an expansion of the optic nerve from the point where this nerve enters the eyeball. A two-millimeter area of the retina at the extreme back portion of the eye and directly opposite the center of the cornea is known as the macula, or reading area. The fovea, a half-millimeter depression at the center of the macula, is the area of clearest vision. Under normal conditions, therefore, the crystalline lens so adjusts itself as to bring the image upon the fovea. The point where the optic nerve enters is known as the disc or blind spot, since no reflection falling on that particular point will be perceived visually. The presence of an image upon the retina produces certain chemical changes which stimulate the optic nerve, and this stimulus is carried to the visual centers in the brain. The inside portion of the eyeball, between the cornea and the iris, is known as the anterior chamber and is filled with a liquid called the aqueous humor. The space behind the iris, between it and the lens and ciliary ligaments, is known as the posterior chamber. It also contains aqueous fluid. The interior of the eyeball, back of the lens, is filled with a thick jelly-like fluid known as the vitreous.

The eyeball is set deeply into the skull, only the frontal portion protruding slightly. Its movements are controlled by muscular processes attached to the sclerotic coat and to the bony socket. By action of these muscles the eye can move from side to side, upwards and downwards as well as in a rotary manner. The cornea is protected by the eyelids, which close by reflex action at the approach of danger. The eyelashes also prevent the lodgment of dust or other foreign matter upon the cornea. It will be observed that the inner structure of the eye is highly complex, and the failure of any part of the mechanism to function properly results in reduced visual acuity. Accidents or diseased conditions may induce abnormalities in certain parts of the eye, while other defects may result from causes less easy to determine.

Common Causes of Blindness and Defective Vision.—Until comparatively recent years ophthalmia neonatorum was a frequent cause of blindness among children. It results from the infection of the baby's eyes during the process of parturition by germs in the birth canal, and it develops so rapidly that within a few days the child's sight may be entirely lost. In 1881 Credè discovered that ophthalmia neonatorum could be prevented by treating the infant's eyes with a solution of silver nitrate immediately after birth.[19, 20] This discovery led to a systematic campaign against the disease, and thirty-five states now require by law the use of a prophylactic in the eyes of all new-born children.[21] While the incidence of ophthalmia neonatorum has decreased greatly in this country due to the effective work of agencies for the prevention of blindness, it still is responsible for some blindness among children.[22] The time may not be far distant, however, when it will be exceptional to find this disease listed among the causes of blindness in the records of schools and classes for those without sight.

Corneal opacities caused by injury or disease, also, are fre-

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[19] Posey, W. C., Op. cit., p. 328.

[20] Lewis, F. P., Op. cit., p. 40.

[21] Harper, C. A., *Prevention of Blindness in Newborn Babies,* pp. 7-8.

[22] Ophthalmia neonatorum as a cause of blindness among entrants to schools for the blind in the United States decreased from 28.2 per cent in 1906-07 to 9.5 per cent in 1928-29. Consult: Harper, C. A., Op. cit., p. 20.

quent causes of blindness and defective vision among children. While accidents may be responsible for a small percentage of these conditions, they generally are produced by systemic diseases, such as syphilis or tuberculosis. The corneal infection known as interstitial keratitis, frequently is associated with syphilis, although it may be due to other causes. Phlyctenular keratitis often is the result of tuberculosis, but poor nutrition,[23] also, may be responsible for this disease. If proper treatment is administered, these corneal diseases usually can be arrested before total blindness results, but, of course, the tissue which has been destroyed or scarred cannot be replaced, so that some degree of visual defect generally is unavoidable.

The absence of pigmentation from the iris, such as is the case among albinos, while not actually a cause of blindness, produces defective vision, since there is no control over the amount of light which may enter the eye. Albino children, therefore, are found in most schools and classes for the blind as well as in sight-saving classes, since their degree of visual acuity is insufficient to permit them to attend regular schools.

The opaque condition of the crystalline lens, known as cataract, while most common among adults of advanced age, frequently occurs in a congenital form. Successful operations for cataract often can be performed, but, since conditions occasionally make such operations impossible, children suffering from this disease are found in schools and classes for the visually defective.

Perhaps the most important cause of blindness and defective vision among school pupils is atrophy of the optic nerve.[24] This condition may be partial or total, producing all gradations of defective vision. It often is progressive, however, eventually resulting in total blindness. Optic atrophy may be congenital or may be induced by certain diseases and systemic infections, such as cerebro-spinal meningitis, diphtheria, scarlet fever, measles, diabetes, or syphilis. The presence of brain tumors, also, is responsible for some cases of this defect, although less common than other causes.

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[23] Griscom, J. Milton, "The Eyes in Childhood," *The Sight-Saving Review,* I, June, 1931, p. 5.

[24] Lamb, H. D., "Juvenile Atrophy of the Optic Nerve," Advanced Reprint from *The Journal of the Missouri State Medical Association,* September, 1928. 2 pages.

Eye accidents among children cause a significant percentage of blindness and visual defects. Injury to one eye with sharp instruments, such as scissors and knives, frequently results in loss of sight not only in that eye, but also in the other through sympathetic ophthalmia. The necessity of guarding carefully against eye hazards at home and in school cannot be impressed too strongly upon parents and teachers, since upon them rests the responsibility of protecting the sight of young children.

Myopia, or near-sightedness, is a visual handicap found among a large proportion of sight-saving class pupils. In fact, the first classes of this type were established in London, England, primarily for myopic children.[25] This condition results from the eyeball being too long from front to back so that only near objects can be focused properly on the fovea. Its seriousness lies in the fact that it often is progressive and that as the eyeball continues to elongate, the retina may become detached from the choroid, producing total blindness. Myopic children, therefore, should use their vision sparingly and only for short periods of time. In advanced cases any form of violent exercise may be extremely dangerous since it may hasten retinal detachment.

Hyperopia, or far sight, is a condition the exact reverse of myopia. The eyeball is too short from front to back so that only distant objects are seen clearly. While this defect may not be so prevalent nor so dangerous as myopia, there is reason to believe that it does exist among a large number of school children, but is less easily recognized than is near-sightedness.

The foregoing represent only a few of the more common causes of visual handicaps among children.[26] There are, of course, many others such as buphthalmus, microphthalmus, glaucoma, and fundus conditions. Trachoma is rapidly disappearing as a cause of blindness among children, owing to improved sanitary conditions, but is still prevalent among children and adults in certain isolated southern and western areas and among the American Indians and white Appalachian mountaineers.

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[25] Myers, E. T., Op. cit., p. 11.

[26] Consult: May, Charles H., *Manual of the Diseases of the Eye.*

Before leaving the subject of causes of blindness and defective vision, however, a word should be said concerning the rôle of venereal diseases. There appears to be a mistaken impression in the public mind that practically all blindness among children is the result of either syphilitic or gonorrhoeal infection in the parents. Scriptural passages frequently are quoted sententiously concerning the visitation of the sins of the fathers upon the children, and an attitude of shocked sympathy toward them is assumed. It formerly was believed that the sole cause of ophthalmia neonatorum was gonorrhoeal infection in the mother, but experience has shown that this is by no means the case.[27] Nevertheless, many parents have felt and still feel that the treatment of their child's eyes immediately after birth would be an implication that they were suffering from gonorrhoea. This attitude has been one of the major difficulties in securing the universal adoption of the Credè method, although it is being overcome gradually. It has been estimated that about 15 per cent of *all* blindness is due to syphilis[28, 29] and when it is remembered that only a relatively small proportion of the blind are below twenty-one years of age, it is seen that probably less than this number of blind children are syphilitic, since the disease produces its most serious results in advanced stages. Granted, however, that 15 or even 20 per cent of blindness among children is of syphilitic origin, the assumption that it is the major cause seems hardly warranted.

It is not intended to belittle the seriousness of venereal disease in modern society, nor to deny that it often does cause blindness when it is present,[30] but so long as these diseases are regarded as a social stigma it is unjust to attribute all blindness to them, and thus add another handicap to the serious one which the child without sight already has to overcome.

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[27] Royer, B. Franklin, "Public Health Aspects of Prevention of Blindness," *A. A. W. B. Proceedings,* 1927, p. 160.

[28] Royer, B. Franklin, Op. cit., p. 162.

[29] Snow, William F., "The Eye and the Venereal Diseases," *The Sight-Saving Review,* I, March, 1931, p. 54.

If blind and partially seeing children are to have equal social and educational opportunities with the physically normal, this erroneous belief must be dispelled and a correct and intelligent understanding of the causes and prevention of visual handicaps substituted. Organizations for the prevention of blindness are doing much toward the achievement of this goal by publishing authoritative statistics concerning causes of blindness, and by trying to promote a more thorough understanding of its relationship to venereal diseases.

Summary.—The present study is intended to be an evaluation of existing facilities for the elementary education of visually handicapped children in the United States. While not primarily historical, sufficient historical material is included to serve as a background for the problems discussed. The immediate purposes of the study are: (1) to clear the ground for further research, pointing out those problems requiring solution, and in some instances offering suggestions for their investigation; (2) to assist teachers of visually handicapped children to a clearer understanding of fundamental theories and objectives; and (3) to stimulate the interest of research workers from the field of general education in problems peculiar to the visually handicapped.

It is somewhat difficult to establish satisfactory definitions of the terms *blind* and *partially seeing,* since factors other than the degree of visual acuity must be considered, e.g., the type of ocular defect. From an ophthalmological standpoint children with less than 20/200 vision, after correction or treatment, generally are considered blind, while children with vision from 20/200 to 20/70, after correction or treatment, plus most cases of progressive eye trouble, are regarded as partially seeing and, therefore, as potential candidates for sight-saving classes. In the present study a blind child is defined as one whose vision, after correction, is insufficient to permit his education by visual methods, while a partially seeing child is regarded as one whose vision, after correction, is insufficient to permit him to be educated satisfactorily and with safety in the ordinary school grades, but who can make use of special visual methods such as those provided in sight-saving classes. It is realized that these definitions do not cover *all* cases, and that individual attention must be given to each child before he can be classified finally as either blind or partially seeing.

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[30] Lehrfeld, Louis, "Venereal Disease and Prevention of Blindness," *The Sight-Saving Review,* I, December, 1931, pp. 47-54.

The incidence of visual handicaps among school children is difficult to determine, since census returns on blind children are not very accurate and there is reason to believe that many blind and partially seeing children are not enrolled in special schools and classes for the visually defective. It has been estimated recently that there are 14,400 blind individuals under twenty years of age in this country, only 6,000 of whom are receiving instruction in schools and classes for the blind. These figures include both elementary and secondary pupils, and it is probable, therefore, that the number of the former alone is much smaller. There are 50,000 partially seeing children in the United States, only 5,000 of whom are receiving instruction in sight-saving classes, which illustrates the need for the extension of this work.

The human eye is very complex and delicate in structure. Abnormalities induced by injury or disease in any part of the optical mechanism generally result in reduced vision or in total blindness.

Ophthalmia neonatorum formerly was a frequent cause of blindness among young children. Its occurrence has been decreased greatly during recent years, however, through laws requiring the treatment of infants' eyes with a solution of silver nitrate immediately after birth, and through the untiring efforts of agencies for the prevention of blindness. Other causes of blindness and defective vision are corneal opacities, resulting from injury or disease; albinism; optic atrophy, either congenital or caused by disease; cataract; myopia, or near-sightedness, in its more advanced stages with the accompanying danger of retinal detachment; and hyperopia, or far-sightedness, in its more acute forms. Eye accidents, also, are responsible for much blindness and defective vision among children, and parents and teachers should strive to guard against these.

There is a mistaken impression in the public mind that practically all blindness and visual defects are due to venereal diseases. This is unfortunate since it attaches a social stigma to the already serious handicap of blindness or partial vision, and reduces the individual's chances of social and economic success. While there is no intention of belittling the seriousness of venereal diseases nor to deny that, when present, they often do cause defective sight, it should be pointed out that only a relatively small percentage of visual handicaps is due to this cause. Organizations for the prevention of blindness are doing much to clear up this misconception concerning the rôle of venereal diseases in relation to blindness by publishing authoritative statistics and other educational literature.

CHAPTER II

THE EVOLUTION OF EDUCATION FOR VISUALLY HANDICAPPED CHILDREN

Early Attitude toward Blindness.—Prior to the latter half of the eighteenth century, the general attitude of the seeing toward the blind throughout Europe was one of harshness and cruelty. It is true that the rapid spread of Christianity during medieval times helped to moderate somewhat this spirit of barbarism by providing hostels and houses of refuge wherein blind people might find food and shelter. Among the first of these hostels was the L'Hôpital des Quinze-Vingts in Paris, believed by some to have been founded in 1260 by Louis IX as a refuge for blinded soldiers returning from the Crusades.[1, 2] Other writers claimed that the Quinze-Vingts was, in reality, founded much earlier and was simply enlarged by Louis IX to accommodate his blind Crusaders.[3] However this may be, this hostel seems to be the first of its kind of which there is any definite record, although it seems highly probable that many monasteries and convents received blind men and women, caring for them throughout their lives.

Despite these humanitarian influences, the blind continued to be regarded as social dependents and, consequently, were often abused. Numerous instances are reported in which blind people were used deliberately to entertain seeing audiences, the awkwardness and blunders resulting from lack of sight being considered highly amusing.[4]

The miserable lot of blind children is well illustrated by the following passage from Bunyan's *Grace Abounding.* Bunyan says:

> The parting with my wife and my poor children hath often been to me as the pulling of my flesh from my bones, especially my poor blind

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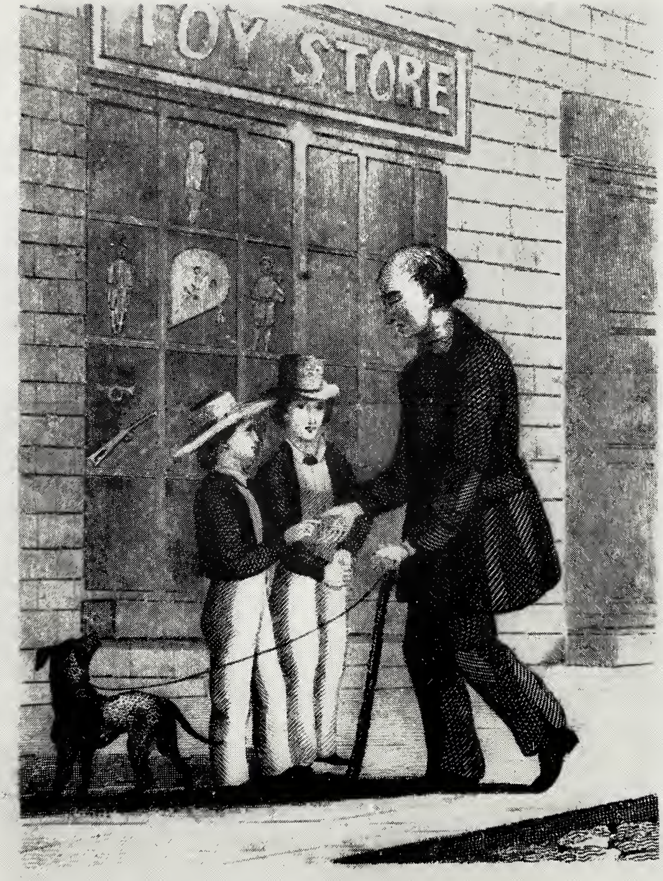
[1] Best, Harry, *The Blind,* p. 255.

[2] Scott, E. R., *The History of the Education of the Blind Prior to 1830,* College of the Blind, National Institute for the Blind, London, W., 1915, p. 3.

[3] Ritchie, J. M., *Concerning the Blind,* p. 5.

[4] Sizeranne, Maurice de la, *The Blind as Seen Through Blind Eyes,* pp 135-136.

THE BLIND BEGGAR



Wait a moment poor old creature,
Is there nothing we can do,
Here - we have a little money
And we wish to give it you.

> child who lay nearer my heart than all I had besides. Poor child, thought I, what sorrow art thou like to have for thy portion in this world! Thou must be beaten, must beg, suffer hunger, cold, nakedness, and a thousand calamities, though I cannot now endure that the wind should blow upon thee.[5]

Small wonder that Bunyan or any other parent of his day should dread to contemplate the future of poverty and abuse which lay before blind children. Nearly a hundred years passed before it was realized that they need not be totally dependent upon charity but might be educated to become useful and self-respecting members of society. Even as late as the nineteenth century it was believed that blind individuals were objects of charity. This is well illustrated in the accompanying picture of "The Blind Beggar" taken from a volume of lithographs entitled *The Parent's Gift,*[6] representative of the period from 1830 to 1875.

Influence of the New School of Philosophy in France.—The new school of philosophy which arose in France during the eighteenth century[7] was responsible in no small measure for eventually bringing about a change in the general attitude toward blindness. Diderot, in particular, through the publication of his *Letter on the Blind*[8] in 1745, helped to create a more intelligent interest in those without sight, dispelling the atmosphere of ignorance and superstition which had hitherto surrounded them.

The humanitarianism growing out of this new speculative philosophy also helped to improve the public attitude toward physical handicaps generally. New conceptions of individual rights emphasized the fact that physical handicaps were not sufficient grounds for exclusion from the privileges of education and normal social participation.

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[5] Bunyan, John, *Grace Abounding,* B. P. Sheriff, Exeter, England, 1814, p. 168.

[6] This picture is mentioned in *The Guidance of Mental Growth in Infant and Child,* p. 51 (The Macmillan Co., Boston, 1930), and is reproduced through the courtesy of its author, Dr. Arnold Gesell, Director, The Clinic of Child Development, Yale University.

[7] Cubberley, Ellwood P., *The History of Education,* Houghton Mifflin Company, Boston, Massachusetts, 1920, pp. 506-508.

[8] Jourdain, Margaret, *Diderot's Philosophical Works,* Open Court Publishing Company, Chicago, Illinois, 1916, pp. 68-141.

It should be pointed out, however, that the interest of Diderot and his colleagues was largely of an abstract nature. They found it fascinating to speculate upon the sensations and perceptions of those without sight and to make theoretical distinctions between the mental processes of the blind and of the seeing. They made no direct attempt to establish means for the education of the blind, nor to work out practical methods whereby such education might be effected. Their theories, however, did stimulate general interest in the problems of blindness, and without this philosophical speculation it is highly probable that practical attempts to educate the blind would have been delayed considerably. Valentin Haüy, the man who accomplished the successful education of blind children, while not a profound philosopher, undoubtedly was influenced by the new thought of his time and this, combined with an active sympathy for those less fortunate than himself, led him to achieve what, at that time, was considered practically impossible.

Valentin Haüy and His Work.—Valentin Haüy[9] (1745-1822) was born in Picardy, the son of a poor weaver. He managed to acquire a good education, studying modern languages at the University in Paris. Before he became interested in the blind he occupied his time in tutoring and translating the foreign correspondence of Parisian merchants.

His interest in the blind was aroused through an incident at St. Ovid's fair in Paris in 1771. To attract customers, the owner of a café had collected a number of blind men whom he dressed in grotesque costumes with tall pointed hats and huge cardboard spectacles. These unfortunate individuals produced a variety of discordant sounds from different musical instruments. To add to their absurdity they had before them racks holding sheets of music, and lighted candles. The burlesque attracted large crowds of loungers who found great amusement in the display. Haüy was much shocked and grieved at the harshness and cruelty underlying the whole performance, and at that moment he determined to give his full time and energy in an attempt to prove that the blind could be educated and become happy and useful members of society.

[9] Sizeranne, Maurice de la, Op. cit., pp. 52-94.

Haüy's first pupil was a boy named François Lesueur, who made rapid progress under his teaching, and soon other blind children came for instruction. In 1784 Lesueur discovered accidentally that he could decipher by touch a letter of the alphabet which had, in the course of printing, been impressed rather deeply on the paper.[10] Haüy at once seized upon this discovery and set about embossing books which could be read by his blind pupils.

It is beyond the scope of the present discussion to enter into a detailed description of the evolution of raised print.[11, 12] The discovery is of utmost importance, however, as it marks the real beginning of the education of the blind, since little could have been accomplished if some means whereby the blind might read had not been devised.

In 1785 through the coöperation of the French Academy of Sciences there was opened in Paris the Institution National des Jeunes Aveugles with Haüy as its director.[13] This marks the beginning of organized education for the blind in special educational institutions. The Paris school was taken over by the State in 1791, but its influence continued to be felt throughout Europe, and as will be seen later, was directly concerned with the opening of schools for the blind in America.

Before leaving the subject of Haüy and his work, it may be pointed out that most of his fundamental theories concerning the education of the blind have proved to be fallacious. He championed the impressionistic viewpoint which holds that the blind must not only be taught to be on a social par with the seeing, but also that they must be educated by the same methods, in order "to preserve, without interruption, the strictest analogy possible between the means of educating the blind and those who see."[14] The more recent developmental viewpoint holds that the blind child must be taken as he is, and that any special methods which will lead to his quicker and easier instruction must be employed.[15] The

[10] *Ibid.*, p. 62.

[11] Bürklen, Karl, *Das Tastlesen der Blindenpunktschrift,* pp. 2-4; 95-96.

[12] Ritchie, J. M., Op. cit., pp. 37-89.

[13] Best, Harry, Op. cit., p. 257.

[14] Haüy, Valentin, *An Essay on the Education of the Blind,* p. 22.

[15] French, R. S., *From Homer to Helen Keller,* p. 174.

conflict between these two points of view is well illustrated in the arguments over embossed print which lasted until the beginning of the twentieth century. The impressionists believed that an embossed alphabetical letter, simplified if necessary, but still easily recognizable to the eye, was the best system of reading for the blind. The developmentalists, on the other hand, believed that the greater tangibility of the raised point more than justified the adoption of an arbitrary system of reading and writing for the blind. It was argued that only a small percentage of blind children ever learned to read embossed alphabetical characters, whereas almost all could master the point system. The developmentalists won the battle, although not without effort, and the arbitrary point system invented by Barbier and improved and introduced by Braille[16] in 1829 has been adopted universally.

Reference to Figure 3 shows that the Braille system, as it is now known, is based upon varying combinations of dots within a six-point field. This field is called a "cell" and is three

1● ●4 1● ●2
dots high and two wide: 2● ●5 or 3● ●4
3● ●6 5● ●6

Haüy was influential in founding institutions in St. Petersburg[17] and Berlin.[18] The former did not materialize into anything of importance, but the latter, opened in 1806 and directed by Zeune, had considerable influence on the subsequent course of education for the blind. Through Haüy's influence, also, a school had been established at Vienna by Klein in 1802. The German idea, primarily, was to teach manual trades, an example of this being the Saxon system of education and after-care of the blind.[19] This industrial conception of education for the blind later influenced one of the pioneer American schools.

Early Work in England.—The work in England[20] began

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[16] *Idem,* "Origins of the Barbier-Braille System," *A. A. I. B. Proceedings,* June, 1930, pp. 461-463.

[17] Sizeranne, Maurice de la, Op. cit., pp. 87-93.

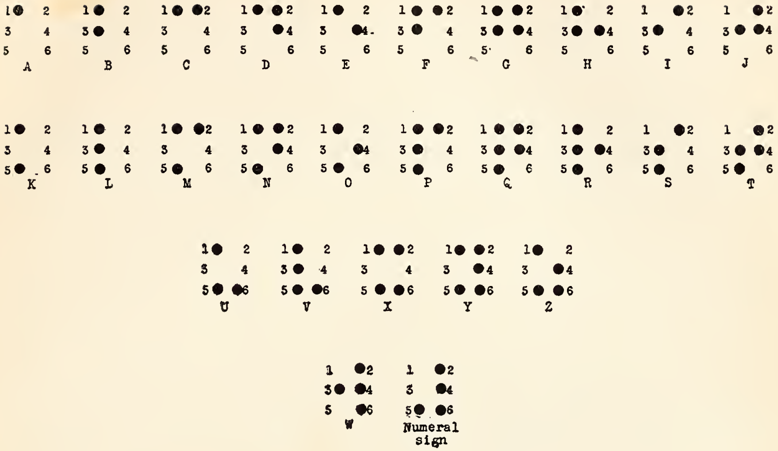
[18] Illingworth, W. H., *History of the Education of the Blind,* p. 5.

[19] Allen, E. E., "Impressions of Institutions for the Blind in Germany and Austria," *Outlook for the Blind,* IV, Spring, 1910, p. 7.

[20] Ritchie, J. M., Op. cit., pp. 12-17.

FIGURE 3

THE BRAILLE ALPHABET



with the founding of a school for the blind in Liverpool by the Reverends Daññet and Smyth in 1791. This was followed in 1793 by the opening of schools in Edinburgh and Bristol, and in 1799 by the founding of the last eighteenth-century institution at Southwark. All these early English institutions emphasized industrial training. A certain amount of elementary education was given, and, in some instances, employment was provided. Unfortunately, the term "indigent blind," bearing a more or less charitable connotation, was used in connection with these early efforts. The majority of these pioneer institutions were termed "asylums," and even today the school in Edinburgh is known as the Royal Blind Asylum and School.

Pioneer American Schools.—New England claims precedence in the education of the blind in America.[21] Certain citizens of Boston were the first to consider seriously the establishment of schools for those without sight in this country. However, in so far as the actual organization of classes and the teaching of pupils are concerned, New York leads by a matter of four or five months.[22] The work of the three pioneer institutions at Boston, New York, and Philadelphia is regarded as the beginning of the education of the blind in America, between 1830 and 1833.[23]

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[21] Perkins Institution Report, 1829, I, p. 4.

[22] Best, Harry, Op. cit., p. 266.

A few facts concerning the founding of each pioneer institution and a general statement of their work will show the similarity of their methods and accomplishments.

Dr. John D. Fisher, a physician of Boston, was responsible for the interest in the blind aroused in that city which led to the establishment of the Massachusetts Asylum for the Blind, later to be known as Perkins Institution and Massachusetts School for the Blind. On February 10, 1829, a meeting of interested citizens was held in the Exchange Coffee House in Boston at which plans were discussed concerning the systematic instruction of the blind in New England. Dr. Samuel G. Howe, a young medical student who had fought in the Greek war of independence, was chosen by Fisher and his associates as the most promising man for this undertaking. At the suggestion of Dr. Fisher, Howe visited Europe during the year 1831 to study methods of teaching the blind[24] and was particularly influenced by the system which had developed in France.[25] In July, 1832, a small class of blind pupils was assembled in the house of Howe's father on Pleasant Street. The school was later removed to the home of Col. Perkins, on Pearl Street, whence it derived its present name. In 1839 the school was again moved to South Boston, where it remained until 1912. At that time a new plant was constructed at Watertown, Massachusetts,[26] which featured the cottage family system, whereby the entire institution was divided into cottage units of about twenty-five individuals. The aim was to enhance the socialization of the pupils by bringing them into closer contact with teachers and other members of the staff, and to introduce self-help and a family spirit rather than the customary institutional atmosphere.

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[23] Allen, E. E., "A Survey of the Work for the Blind in the United States from Its Beginning Until Now," *A. A. I. B. Proceedings,* 1926, p. 290.

[24] *Address of the Trustees of the New England Institution for the Education of the Blind to the Public,* Boston, Massachusetts, Carter, Hendee and Company, 1833, p. 6.

[25] *Ibid.,* p. 15.

[26] Allen, E. E., "The Perkins Institution for the Blind," *Director's Report,* 1912.

Perkins has remained primarily an endowed private school. All the New England states except Connecticut send their blind children there to be educated, paying a moderate fee for each child. Massachusetts does likewise, and although Perkins nominally is under the supervision of the State Department of Education, it exercises little influence either upon the financial or educational policies of the institution.

As early as 1827 several New York citizens including Mr. Samuel Woods and Dr. Samuel G. Ackerly became interested in the possibility of educating those without sight after observing some blind children in the almshouse. This same idea occurred, also, to Dr. John D. Russ, and when the New York Institution for the Blind (known later as the New York Institute for the Education of the Blind)[27] was incorporated in 1832 he was its first director, and began teaching his first class of pupils in March of that year. The history of this institution was uneventful until 1863 when Mr. William B. Wait took charge. He investigated the tactual qualities of the forms of raised print in general use at that time and found that a point system was decidedly superior to the embossed alphabetical character. From that time he became the champion of a system known as New York Point, a modification of Braille.[28]

A discussion of the type war concerning the relative merits of Howe's Boston line letter, (a modified Roman alphabetical type), and Wait's New York Point system which occupied educators of the blind from 1863 until the end of that century cannot be entered into here.[29]

The significant point to be noted in this connection is, however, that for about forty years the progress of education for the blind was seriously retarded. As soon as the dominating Mr. Wait had subdued the adherents of line type, another argument arose over the merits and demerits of Braille and New York Point. Mr. Joel Smith complicated matters still further by initiating a revision of the Braille system which was known as American Braille. Nevertheless, the introduction of this system probably prevented New York Point from becoming the generally accepted type for the blind in the United States. Thus the fight continued until in 1920 the labors of the Uniform Type Committee resulted in the adoption of a universal Braille system.[30]

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[27] Best, Harry, Op. cit., p. 266.

[28] Wait, William B., *Key to the New York Point System of Tangible Writing and Printing,* New York Institution for the Blind, 1908.

[29] Best, Harry, Op. cit., pp. 395-410.

Julius Friedlander,[31] a German, whose ideas on the education of the blind had been acquired from the work of Klein and Zeune, established the school in Philadelphia in 1830. It was somewhat isolated from the other pioneers because of a peculiar embossed type which he introduced. Following the German idea the Pennsylvania school was devoted primarily to industrial training, and at the present time pays considerable attention to vocational training and guidance. The school, known as the Pennsylvania Institution for the Instruction of the Blind, was removed later from Philadelphia to Overbrook, Pa., where it is at present located. Although it is not a state institution, it is now supervised by the State Department of Education.[32]

All three of the pioneer institutions herein described followed similar methods during their early days. A few pupils were trained and then a tour of exhibition was arranged. After demonstrating the educability of the blind before wondering crowds, public appeals for financial assistance were made. Those were hard days for both teachers and pupils. There was practically no special equipment and the teacher had to use every resource of which his ingenuity was capable in order to make his subject intelligible to the blind pupil. The long journeys and frequent exhibitions were exhausting and occupied so much time that the pupils became seriously retarded academically.[33]

From the beginning it was the hope and ambition of promoters of work for the blind in this country to put the education of children without sight on a non-charitable basis. It already has been pointed out that English institutions were referred to as "asylums" rather than as schools, and Perkins Institution was first incorporated as the Massachusetts Asylum for the Blind, although the name soon was changed. This hope has been realized largely by the recognition of the education of blind children as a legitimate part of state educational programs.[34]

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[30] Maxfield, Kathryn E., "Summary of the Information Collected by the Uniform Type Committee on the Mechanics of Reading Raised Type," Reprinted from the *Outlook for the Blind,* March, 1925, 7 pages.

[31] Best, Harry, Op. cit., p. 267.

[32] Burritt, O. H., "State Recognition as an Educational Institution—A School," Reprinted from the *Ninety-First Annual Report of the Pennsylvania Institution for the Instruction of the Blind,* Overbrook, Philadelphia, 1923, 4 pages.

[33] Allen, E. E., "A Survey of the Work for the Blind in the United States from Its Beginning Until Now," *A. A. I. B. Proceedings,* 1926, p. 291.

The State Schools.—In 1837 the Ohio legislature invited Dr. Howe to superintend the opening of a school for the blind in Columbus.[35] Funds were appropriated and the school began upon a much firmer basis than any of its predecessors, and has continued to be one of the largest schools of its type in the country.

The establishment of the Ohio school marked the beginning of state institutions for the blind in America.[36] During the succeeding twenty-five years the growth of such institutions in western and southern states was rapid, too rapid, perhaps, to be entirely healthy. In many instances, dual schools were opened where both blind pupils and deaf pupils received instruction. This was unfortunate, since the blind and the deaf are unable to adjust themselves to one another's particular handicaps.[37] Nevertheless, there are nineteen schools which still continue to educate blind children in the same school with deaf children.[38]

Twenty-five years after the opening of the first state school, nineteen states had established such institutions. During the next twenty-five years ten more were added, and at present there are fifty-four state institutions for the blind in the United States, and seven private schools receiving state help.[39] Those states which have as yet no special school of their own, make provisions for the education of their blind children in adjoining states.

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[34] Howe, S. G., *Report of the Director to the Trustees of the Perkins Institution and Massachusetts Asylum for the Blind,* Metcalf and Company, Cambridge, Massachusetts, 1851, pp. 20-21.

[35] Report of the Ohio School, 1849.

[36] Best, Harry, Op. cit., p. 280.

[37] *Ibid.,* p. 298.

[38] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 18.

[39] *Ibid.,* p. 17.

It will be seen, therefore, that the education of the blind has been fairly well accepted in this country as a state duty of equal importance with the education of the seeing. To this extent the stigma of charity has been avoided. The fact must not be overlooked, however, that ten states still have no compulsory education laws affecting blind children.[40]

The chief advantage of state schools for the blind is financial security. Public subscription is a very unsatisfactory means of financing an educational project. Lack of financial stability makes it impossible to carry out a progressive educational program extending over a period of years. Of course, highly endowed private institutions do not suffer in this respect, but in most cases it is safe to say that if the state did not provide funds, the education of the blind would be a dismal failure.

Another advantage of state control is the raising of educational standards of schools for the blind to the same level as those for the seeing. This does not mean that standardization is a desirable quality in education, but if schools for the blind are to shape their own curricula regardless of what is being taught elsewhere, the graduates from such schools will find themselves seriously handicapped if they wish to follow any form of higher education.

The supreme disadvantage of the state institution, not only for the blind but for other types of handicapped individuals, has always been and still is political interference.[41] This evil is perhaps more manifest in schools for the blind since, due to lack of public interest and ignorance, inefficiency is less apparent.

Day-School Classes for Blind Children in the United States.—In 1851 Dr. Howe stressed the social advantages which would accrue if blind children could be educated in ordinary schools for the seeing.[42] This idea, however, was not put into effect until 1900 when, through the efforts of Frank H. Hall, an ardent advocate of Dr. Howe's theory, the first special class for blind children in the public schools of this country was opened in Chicago.[43]

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[40] "The Blind," *Special Education: The Handicapped and the Gifted,* p. 252.

[41] Allen, E. E., "A Survey of the Work for the Blind in the United States from Its Beginning Until Now," *A. A. I. B. Proceedings,* 1926, p. 292.

These classes are formed by fitting up a special classroom with suitable apparatus which enables blind pupils to carry on the work of the regular school under the guidance and supervision of a special teacher. Children enrolled in such classes often represent several grade levels and an effort usually is made to have them do as much of their work as possible in the ordinary classrooms with their seeing companions. They return to the special classroom for instruction in reading, writing, arithmetic, and other subjects requiring special methods.[44]

From a modest beginning the day-school movement has spread rapidly. Classes are found generally in the larger cities of certain states where the incidence of blindness in the school population is sufficiently large to warrant the expense involved in their establishment. At the present time twenty-one cities make legal provision for blind pupils in their public-school systems. Only fifteen cities, however, have established classes with a total enrolment of 423 pupils.[45] Since eight states grant special subsidies, it seems highly probable that the number of day-school classes will continue to increase until every large city in the United States has organized at least one class for its blind children.

Sight-Saving Classes in the United States.—Sight-saving classes may be described as special classes in the public schools for children who are not blind, but whose vision is so seriously defective that it is difficult or dangerous to their sight for them to carry on ordinary school work.[46] A classroom is provided with special lighting and seating arrangements. Large-type books, outline maps, and other apparatus are supplied, so that the pupils are subjected to a minimum of eye strain.[47] Emphasis is laid on the fact that sight-saving class pupils are *seeing* children and that such classes are quite distinct from and not to be confused with special day-school classes for the blind.[48]

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[42] Howe, S. G., *Nineteenth Annual Report of the Trustees of Perkins Institution,* Metcalf and Company, Cambridge, Massachusetts, 1851, p. 14.

[43] Best, Harry, Op. cit., p. 312.

[44] Paterson, Janet G., "Education of the Blind Child in Public Day Schools," *Outlook for the Blind,* Spring, 1921, p. 72.

[45] Three additional cities have legal provision for Braille classes, but do not maintain them at present. Consult: "The Blind," *Special Education: The Handicapped and the Gifted,* pp. 247-248.

[46] Myers, Edward T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* p. 9.

The first sight-saving class in the United States was opened in Boston in April, 1913,[49, 50] through the efforts of Edward E. Allen, Director of Perkins Institution, who had recently visited the special classes for myopes established in the London, England, schools by N. Bishop Harmon. In September, 1913, a second sight-saving class was opened in Cleveland[51] under the direction of R. B. Irwin, now Executive Director of the American Foundation for the Blind. It is of interest to note that although sight-saving leaders in this country now spurn all connection with the education of the blind, the pioneer class was started by an institution for blind children, while the second was inaugurated and directed by a blind man.

Since their inception sight-saving classes have multiplied rapidly. In January, 1930, there were 350 such classes with an enrolment of 4,829 pupils in 93 cities and 2 counties representing 21 states.[52] The work has been promoted not only by organizations directly concerned with saving sight, but also by many other social and philanthropic agencies. Despite this rapid growth, however, there are still many cities needing sight-saving classes where none are yet established. Relatively few states have officially recognized sight-saving classes as part of their regular educational systems, and in many cases partially seeing children who belong properly in these classes are being educated in residential schools for the blind.

[47] Lawes, Estella, *Methods of Teaching Sight-Saving Classes,* pp. 6-9.

[48] Lawes, Estella, Op. cit., pp. 4-5.

[49] Hadley, Hazel, and Hathaway, Winifred, *Sight-Saving Classes, Their Organization and Administration,* p. 5.

[50] Myers, Edward T., Op. cit., p. 11.

[51] *Idem.*

[52] Twenty-five additional classes have been established during 1930-1931. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 120.

National Organizations.—Progress in the education of visually handicapped children and in the prevention of blindness in the United States has been accelerated considerably by certain national organizations.

Foremost among these is the American Printing House for the Blind[53] whose chief function is to supply schools with embossed textbooks, maps, and other apparatus. Early efforts to educate children without sight was seriously handicapped by the lack of suitable books, and it soon was realized that little could be accomplished without their assured production and distribution. To meet this need, the American Printing House was established in 1858, financed by private subscription and small per capita grants from various states. In 1876 Congress voted it a thirty-year annual income of $10,000. This income was made permanent in 1906, and in 1920 and 1927 it was increased until it now totals $75,000.

The Printing House is managed by a superintendent and assistant superintendent, while all directors of residential schools for the blind are ex-officio members of the governing body. In this way, each school may have a voice in what shall be published. Probably no single institution has been of greater influence in the education of blind children than this federally subsidized plant for printing embossed books.

The problems involved in the establishment of the American Printing House were directly responsible for the formation in 1853 of another national organization known as the American Association of Instructors of the Blind.[54] It originated from a meeting of a number of superintendents of schools for the blind who assembled in New York to discuss ways and means of approaching Congress for a Federal grant for the embossing of books. No further meetings were held until 1871, then 1872, and since that time the American Association of Instructors of the Blind has continued to meet biennially. Its present function[55] is to provide a means of discussing problems connected with the education of blind children and to stimulate an exchange of ideas on aims and methods among different schools throughout the country.

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[53] Wampler, I. S., "The American Printing House for the Blind, Its Scope and Function," *A. A. I. B. Proceedings,* 1930, pp. 473-478.

[54] Smith, J. W., "History of the American Association of Instructors of the Blind" (Reprinted from *The Mentor,* July, 1892), *Outlook for the Blind,* II, July, 1908, pp. 61-64.

[55] Rand, Lotta S., *Directory of Activities for the Blind in the United States and Canada,* p. 297.

The American Association of Workers for the Blind[56] was founded originally in 1895 as the Missouri National College Association. In 1896 the name was changed to The American Blind People's Higher Education and General Improvement Association, and finally in 1905 received its present title. Its membership consists largely of blind persons, while in the Association of Instructors seeing members are in the majority. The aim of the American Association of Workers for the Blind is to promote the welfare of the blind generally, with particular emphasis upon social and economic problems. While the Instructors are concerned primarily with blind children, the Workers extend their activities to include blind adults.

The American Foundation for the Blind, Inc.,[57] New York City, was established in 1921 through the efforts of the A. A. W. B. Its aims and activities are described thus:

> To collect and disseminate information regarding work for the blind. To promote State and Federal legislation in their behalf. To arrange for the establishment of needed agencies for the blind throughout the country. To assist in increasing the efficiency of work for the blind in all particulars.[58]

The National Society for the Prevention of Blindness was founded in 1915 as a result of increasing interest in the work of prevention of blindness. Its aims are:

> To ascertain the causes of preventable blindness and impairment of vision, and advocate such measures, in coöperation with the medical profession, as may eliminate such causes and promote in every way the conservation of vision throughout the United States.[59]

The Eyesight Conservation Council, located in Washington, D. C., was incorporated in 1920, and is somewhat similar to the N. S. P. B. Its functions are:

> To promote general conservation and betterment of vision. To improve conditions that may impair vision. To carry on educational work in schools, clubs, industrial groups, etc. To conduct research

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[56] Rand, Lotta S., *Directory of Activities for the Blind in the United States and Canada,* p. 297.

[57] *Outlook for the Blind,* XVII, May, 1923, pp. 5-8.

[58] Rand, L. S., Op. cit., p. 166.

[59] *Ibid.,* p. 185.

relating to eyesight conservation. To keep the public informed of the importance of becoming eye-conscious.[60]

With the exception of the American Printing House for the Blind, the American Association of Instructors of the Blind, and the American Association of Workers for the Blind, these national organizations depend, primarily, upon public subscription for financial support.

Recent Developments.—The effort to institute scientific methods into the education of blind children marks an important new departure in the field. The aim is to introduce changes gradually upon the basis of careful research rather than upon opinion and empirical judgments.

This movement toward scientific research began with the development of tests of intelligence and achievement especially adapted for use with blind pupils. In 1919 the Pennsylvania Institution for the Instruction of the Blind created a department of research,[61] and at about the same time Perkins Institution, also, became interested. These two departments conducted testing programs in their respective institutions, and, also, surveys in other schools. From these surveys an adaptation of the Stanford-Binet Intelligence Test and several achievement tests were worked out.

In 1924 the American Foundation for the Blind established its Bureau of Research and Education[62] with the object of enlarging and continuing the work already begun. Several years later, however, it was discovered that a special experimental school was needed as a laboratory, and in 1927 a joint arrangement was entered into by the American Foundation and Perkins Institution, whereby the latter permitted the limited use of its Lower School for experimental purposes. This is now known as the Department of Special Studies,[63-65]

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[60] *Ibid.*, p. 40.

[61] Hayes, S. P., *Ten Years of Psychological Research in Schools for the Blind,* p. 3.

[62] *Ibid.*, p. 6.

[63] *Proceedings of the A. A. W. B.*, June, 1927, pp. 226-227.

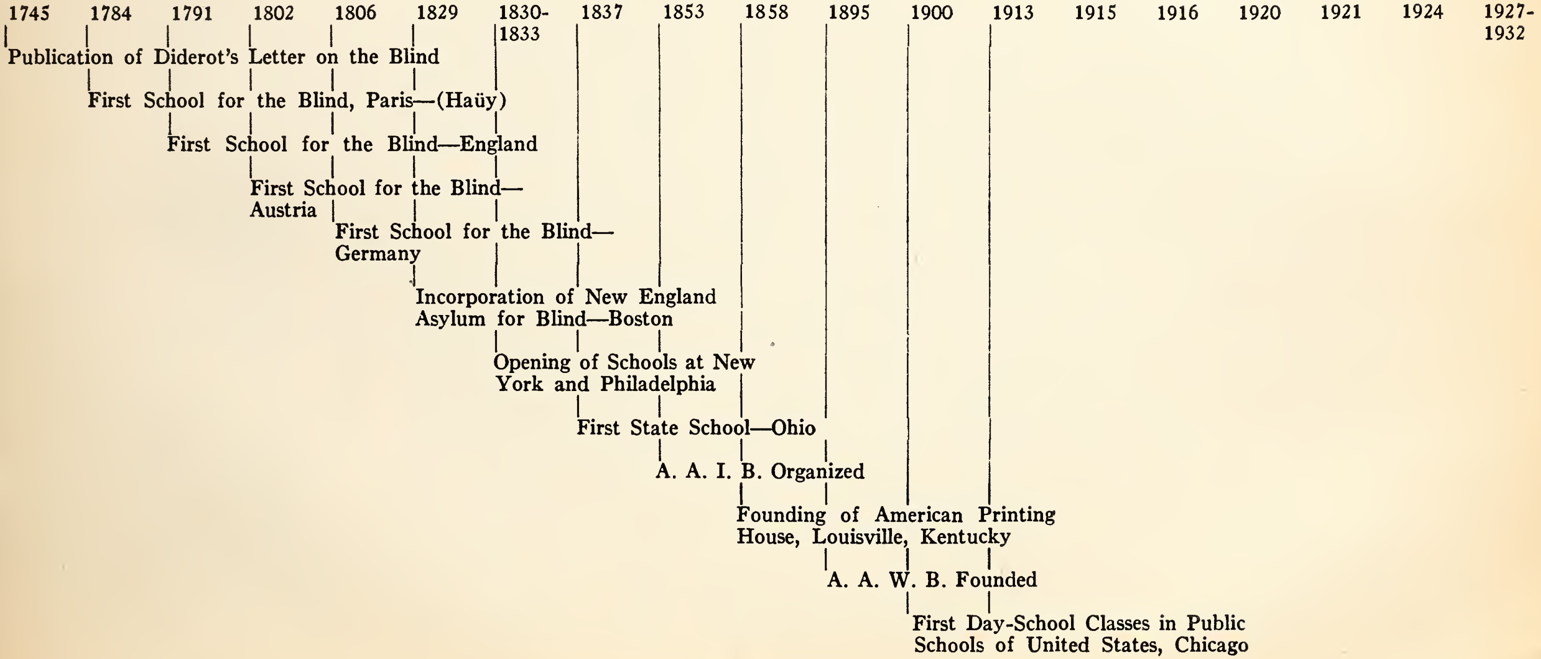
[64] Kiefer, Frieda A., "The Experimental School—The Department of Special Studies," *A. A. I. B. Proceedings,* 1928, p. 405.

[65] French, R. S., "The Function and Value of Research in Schools and Classes for the Visually Defective," *Outlook for the Blind,* December, 1928, pp. 12-17.

FIGURE 4

GRAPHICAL SUMMARY OF THE ORIGIN AND GROWTH OF EDUCATION FOR VISUALLY HANDICAPPED CHILDREN

(1745-1927)


1745
1784
1791
1802
1806
1829
1830-1833
1837
1853
1858
1895
1900
1913
1915
1916
1920
1921
1924
1927-1932
Publication of Diderot's Letter on the Blind
First School for the Blind, Paris—(Haüy)
First School for the Blind—England
First School for the Blind—Austria
First School for the Blind—Germany
Incorporation of New England Asylum for Blind—Boston
Opening of Schools at New York and Philadelphia
First State School—Ohio
A. A. I. B. Organized
Founding of American Printing House, Louisville, Kentucky
A. A. W. B. Founded
First Day-School Classes in Public Schools of United States, Chicago

1745 1784 1791 1802 1806 1829 1830-1833 1837 1853 1858 1895 1900 1913 1915 1916 1920 1921 1924 1927-1932

First Sight-Saving Classes in the United States—Boston, Cleveland

The National Society for the Prevention of Blindness founded, New York

Establishment of Departments of Psychological Research, Overbrook, Pa., and Watertown, Mass.

Establishment of Eye-Sight Conservation Council of America, New York

Founding of American Foundation for the Blind, Inc., New York

Organization of Bureau of Research and Education, American Foundation

Establishment of Department of Special Studies and is intended to serve as an experimental and eventually as a demonstration school in progressive teaching methods for the education of the blind. Its aim is not confined solely to research work at Perkins, but it plans to become a coördinating agency and clearing house for coöperative experimental investigations conducted in other residential schools.[66]

Summary.—The survey of the origin and growth of educational facilities for visually handicapped children which has been presented in this chapter is summarized graphically in Figure 4. The publication of Diderot's *Letter on the Blind* marks the beginning of active and intelligent interest in the problems of those without sight. This interest was abstract and philosophical, however, and the actual education of blind children did not begin until Haüy established the first school for them at Paris in 1784. The success of this school resulted in the establishment of others in Germany and England during the eighteenth century. It also was responsible in a large measure for the organization of the first institution in the United States—the New England Asylum for the Blind, incorporated in 1829, now known as the Perkins Institution and Massachusetts School for the Blind. Other pioneer schools for the blind in the United States were those at New York and Philadelphia, opened between 1830 and 1833. From these humble beginnings, supported chiefly by public charity, the education of blind children in this country is becoming recognized as a state duty of equal importance with that of the seeing.

Special classes for blind children in city public-school systems were introduced at the beginning of the twentieth century and have continued to increase. Since 1913 sight-saving classes for partially seeing children have been organized in many progressive public-school systems.

The federally subsidized American Printing House for the Blind has been a marked stimulus in the education of those without sight through the assured production of suitable textbooks and apparatus. Other national organizations, viz., the American Association of Instructors of the Blind, the

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[66] The Department of Special Studies was discontinued in June, 1932, owing to financial difficulties.

American Association of Workers for the Blind, the American Foundation for the Blind, Inc., the National Society for the Prevention of Blindness, and the Eyesight Conservation Council have rendered and are continuing to render valuable service in the education of visually handicapped children as well as in the prevention of further blindness.

Finally, there is evidence that the long-prevailing empirical methods of determining proper educational procedures for visually handicapped children are yielding to newer ideas based upon scientific research.

CHAPTER III

AIMS IN THE EDUCATION OF VISUALLY HANDICAPPED CHILDREN

Early Aims in the Education of Blind Children.—Although Haüy's theory that the blind should be educated by methods as similar as possible to those used with the seeing has proved to be unsound, the fundamental aim in his work, viz., to make the blind at least partially self-supporting, was adopted not only by his immediate followers in France and in other countries, but also has continued to be the objective of many modern schools for the blind. Religious instruction was considered a basic aim in the education of the blind in a majority of the early British institutions and this, accompanied by industrial training, constituted practically all the education which they received. Ritchie quotes certain paragraphs written in 1851 concerning one English school for children without sight which illustrate the predominance of the religious motive.

> The first and most anxious desire [of the management] is to promote the spiritual welfare of their pupils by a system of careful religious instruction; but they are not insensible to the advantages arising, even to this object, by the mental training and general development of the faculties produced by a sound education. While, therefore, the Word of God has been made the basis of all else, the attention of our committee and of their officers is by no means limited to this single object, but extends to all the branches of a sound education.[1]

It will be seen that what are now considered fundamentals in elementary education were, in this particular school, thought only to be the merest incidentals to the apprehension of "spiritual truths" by the pupils. It must be remembered, of course, that the religious motive received considerable attention in the education of the seeing during the nineteenth century, but the presence of physical defects, especially blindness, seems to have created the impression that added emphasis upon religious instruction is required. Another quotation from Ritchie illustrates the extent to which religion was literally forced upon pupils in schools for the blind.

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[1] Ritchie, J. M., *Concerning the Blind,* p. 23.

Here is the description of a Sunday in 1838: "After breakfast and before the inmates prepare for Church, they are assembled in the Schoolroom when one of the blind reads a Chapter of the Bible and each boy and girl repeats a Psalm or Hymn. Afterwards they are attended to Church. In the evening each has his book. It is most encouraging to perceive with what care the pupils acquire the task assigned them. They will repeat six, eight and twelve verses with great correctness. At the hour fixed, they all assemble in the School-room before the teacher and repeat the task which they have learned. Afterwards they read a chapter and close the exercises with prayers. At eight o'clock they retire to bed."[2]

In America,[3] while religious instruction formed an important part of the program in the early schools, it was not allowed to monopolize the time of the pupils as it seems to have done in certain English schools. From a study of the writings of Dr. Howe, it has been inferred that he considered the principal aims in the instruction of blind children to be "improvement in knowledge and virtue and in a capacity for self-support.[4]" While "knowledge" and "virtue" may be somewhat vague, the ability to earn a living has, at least, the advantage of being a definite objective. It should be borne in mind in noting the emphasis upon self-support in the early education of the blind that, in this country as well as in Europe, prior to the opening of special schools, no means of support other than beggary and the charity of friends and relatives was open to those without sight. It is not surprising, therefore, that the pioneer schools should seek to remedy this most obvious evil first through teaching trades, and that academic instruction should be considered only in the most general terms. The fact that many of the trades which were taught did not enable blind pupils to earn a living eventually led many schools in this country to place less stress upon the utilitarian aim and to relegate what had once been considered preparation for industrial vocations to the realm of general manual training. Thus, a statement of the aim in the education of the blind in 1874 is this: "To give that knowledge and mental culture which will best fit the person for life—for life in all its phases."[5] During more recent years, however, it has been realized that schools for the blind must do more than give their pupils the traditional cultural education of a generation ago, and interest in educational and vocational guidance is being manifested. As seen in the following section, however, much remains to be done in order to bring the theories and aims of educators of children without sight into line with the best modern educational theory and practice for the seeing.

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[2] *Ibid.,* p. 23.

[3] Howe, S. G., *Supplement to the Forty-Third Annual Report of the Perkins Institution for the Blind,* pp. 15-16.

[4] Chapin, William, "Address" (on the Character and Services of Dr. S. G. Howe), *A. A. I. B. Proceedings,* August, 1876, p. 31.

Present Objectives in the Education of Blind Children.—Since blindness is regarded generally as an economic problem it is not surprising, perhaps, that many modern educators of children without sight should have as their principal objective the ultimate self-support of their pupils. It has been stated recently, for example, that "unless the training of the blind is adequate and so planned and directed as to result in self-support and independence in some line of world activity, the job of education is, perhaps, poorly done."[6] The importance of this aim can hardly be denied, since any educational system which does not ultimately produce socially efficient individuals certainly is not functioning properly.

Whether or not the economic independence of otherwise normal blind children is achieved through the courses of vocational training now offered in most schools for the blind is a question which lies beyond the scope of the present discussion. There is reason to believe, however, that the tendency to cling to standard occupations for those without sight, such as basket-making, chair-caning, etc., for which there is no longer any great demand, makes it difficult for a blind individual to succeed in making a living unless special facilities such as subsidized shops are provided.

It is difficult to find a clear statement of the aims of elementary education for children without sight. Most superintendents of residential schools for the blind state simply that they strive to give students general education,[7] that their course of study is similar to that prescribed by the state,[8] or that their curriculum is equal to that found in the best schools for the blind.[9] It is implied, however, that elementary education is chiefly preparation for vocational training or for secondary and higher education. The conception of education as preparation for living rather than as actual life experience is thus expressed by one writer:

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[5] Smead, George L., "Oral Instruction the Chief Reliance in Institutions for the Blind," *A. A. I. B. Proceedings,* 1874, p. 26.

[6] Consult *Report of the Tennessee School for the Blind,* Nashville, Tennessee, 1927-1929, p. 16.

> The aim of education is to prepare for complete living. To live completely means to be as useful as possible and to be happy . . . we must aim to supply such training as will enable every normal blind young man to support himself; and every normal blind young woman to render useful service either in her own home or elsewhere, according as opportunities may be found for her; and that that training that does not supply the means to these ends in so far inadequate.[10]

This conception of the preparatory, disciplinary function of elementary education for blind children may be observed in much that has been written concerning the education of those without sight. Thus, it is claimed that long periods of time should be spent on formal kindergarten exercises in order to train the blind child's hands, and thus prepare him for finger-reading. This belief in the necessity of hand-training continues throughout most of the elementary grades and much time generally is devoted to this type of work. The oft-repeated saying that "the hand is the eye of the blind" has been accepted so widely by educators of blind children that manual training seems to be considered generally as the best solution for all educational problems.

Manual exercises, therefore, are defended by some educators of the blind on the ground that they aid in the general education of the pupil by "training the hand and mind to work together"[11] and "by stimulating the brain cells through motor activity,"[12] and again that "a job can be easily learned when the mind and hand are trained."[13] These reasons seem insufficient when examined in the light of modern educational theory. The stimulation of brain cells through motor activity is strongly suggestive of formal discipline, while leaders in vocational education emphasize the fact that industrial skills are highly specific and cannot be improved through general manual training.[14]

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[7] *Report of the State School for the Blind and the Deaf,* Raleigh, N. C., 1926-1928, p. 10.

[8] *Biennial Report of the Louisiana State School for the Blind,* Baton Rouge, Louisiana, June, 1928, p. 6.

[9] *Catalogue and Announcement,* Texas School for the Blind, Austin, Texas, 1930-1931, p. 20.

[10] Burritt, O. H., *The Aim in the Education of the Blind,* pp. 2-3.

[11] *Year-Book,* The New York Institute for the Education of the Blind, New York, New York, 1930, p. 29.

The so-called "sense training" also has received considerable attention in the elementary education of blind children. It rests on the theory that hearing and touch, especially the latter, can be trained to compensate for the lack of vision. In accordance with this theory numerous tactual and auditory "exercises" have been devised and in some instances considerable time is spent on this work, especially among younger children. It has been stated recently that "time spent in sense perception work, both in and out of the classroom, will train the hands, stimulate the mental faculties and enrich the child's life many-fold."[15] Although the foregoing quotation is taken from a 1926 publication, its authors apparently are unaware that faculty psychology is no longer accepted in this country as a valid excuse for educational procedure!

Absence of vision does remove one of the child's most important avenues of experience, and to endeavor to make up for this loss by directing his attention to other sensations is a most valuable phase of his education. This need not be done through formal exercises, however, but by seeking to bring common objects and occurrences within the range of his comprehension. The suggestion that blind children be taught to recognize bird calls, the odor of flowers, and other simple facts of nature[16] illustrates the possibilities of this type of education. Such work never should be made a formal task but should be the product of the child's spontaneous interest aroused through verbal descriptions of a kind which he can understand.

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[12] *Year-Book,* The New York Institute for the Education of the Blind, New York, New York, 1926, p. 41.

[13] *Idem.*

[14] Prosser, Charles A., and Allen, Charles R., *Vocational Education in a Democracy,* The Century Company, New York, 1925, pp. 282-283.

[15] *The Education of the Blind* (A Symposium), Compiled by Members of the Faculty, Illinois School for the Blind, Jacksonville, Illinois (Reprinted from *Welfare Magazine,* XVII, November, 1926, pp. 19-27; also December, 1926, pp. 33-39.) Consult p. 5.

[16] Third Biennial Report, California School for the Blind, Berkeley California, June, 1928, p. 28.

The formality which appears to characterize much of the manual training and object teaching in schools for the blind seems, also, to be present in some degree in the teaching of the ordinary school subjects. The tendency to follow the textbook systematically from Page One to the end of the grade assignment, regardless of children's interests, has made many academic subjects formal and uninspiring. In some schools for the blind the introduction of project work and material better suited to the children's needs has shown that the newer conception of education, as a properly graded series of life experiences, can be adapted to the use of blind pupils with most gratifying results.

It is perhaps inevitable that the social aim in education is most difficult to achieve in residential schools for the blind where children are segregated upon the basis of a common handicap. This social objective, however, should be fundamental for those without sight. Formal instruction totally different from life situations, absence of competent playground supervision, and few contacts outside the institution deprive the pupils of an opportunity to develop social attitudes and coöperation among themselves and encourage the belief that the institution is their world and always will provide for them. This social aspect of education is of utmost importance in the case of blind children, since it is largely responsible for their ultimate acceptance by the seeing world. The objective in the education of visually handicapped children should not be to emphasize their differences from the seeing but rather to provide the means for their normal social development so that eventually they will be absorbed into ordinary society. So long as the general public regards a blind or partially seeing individual as a being entirely outside the pale of normal society, the chief purpose of education has not been accomplished. It is necessary, of course, that the public also be educated as to what visual handicaps really signify, and led to adopt a less prejudiced attitude toward them. Nevertheless, the systems of education for visually handicapped children, and especially residential schools for the blind, are by no means blameless for the failure of many children without sight to adjust properly to ordinary social conditions after leaving school.

There is great need for a thorough revision, in accordance with modern theories and practices, of the elementary curriculum in the majority of residential schools for the blind. Although formal subject matter cannot be eliminated at present, greater emphasis should be placed upon individual differences and pupil activity, and the program ultimately should parallel life situations as closely as possible.[17] The needs of blind children probably are somewhat different from those of the seeing, since lack of vision makes it necessary to bring many details within their comprehension which are quite obvious to those with sight. Teachers of blind children frequently are disconcerted to find that their pupils are ignorant of some of the most commonplace phenomena because these never had been explained or described to them, or brought within the range of their sense experience. In basing a curriculum upon the needs of children without sight, therefore, care must be taken to provide them with types of experience similar to those of the average seeing child in so far as practicable. In this connection the value of object teaching cannot be overestimated, provided that the objects and models employed can be apprehended correctly by touch.

Project work, socialized recitations, and supervised play should be valuable aids in developing desirable social attitudes in blind children. In addition, some understanding of the work of the world and of social and economic interdependencies should be gained by the pupils. In this way blind children will realize that their school is only a small unit in society and not a complete world in itself.

Until elementary education for children without sight is thoroughly remodeled according to the best present theories and practices, and its results are evaluated by statistical procedures rather than by opinion and rhetoric,[18] it will remain unsatisfactory. It is not proposed that the mastery of fundamental tool subjects be abandoned as a major aim in elementary education for blind pupils, but it is suggested that they be taught through more interesting devices. They should not be made ends in themselves but rather means to activities which the children can understand and appreciate. A few educators of blind children are beginning to realize that their objectives and methods are many years behind those of progressive educators of the seeing. For example, one superintendent of a school for the blind declares that arithmetic as mental gymnastics has no place in the curriculum,[19] while another urges the rejection of the theory of formal discipline and the adoption of the concept of education as growth.[20]

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[17] Harap, Henry, *The Technique of Curriculum Making,* The Macmillan Company, New York, New York, 1928, p. 268.

It should be pointed out that on the whole day-school classes for blind children probably are not so prone to adhere to outworn theories and methods as are residential institutions. The fact that these classes are a recognized part of the public-school systems of cities where they are located, tends to bring them in line with the best current educational practices for seeing children. Of course, there are numerous city public-school systems which are not so progressive as could be wished, and in such cases the classes for blind children probably would be no better than the educational facilities of an ordinary residential institution. It may be argued that many residential schools are required to meet state standards and, therefore, that the education which they offer is as good as any in that particular state. It is true that many schools are expected to conform to state standards, and it is most desirable that this should be so, but, in most instances, state standards are concerned with the amount of factual knowledge absorbed by the pupils rather than with the methods employed in obtaining it. Furthermore, the state seems generally to be exceedingly lenient in its inspection of schools for the blind.

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[18] Buckingham, B. R., *Research for Teachers,* Silver, Burdett and Company, Boston, Massachusetts, 1926, p. 81.

[19] *Third Biennial Report,* California School for the Blind, Berkeley, California, June, 1928, p. 30.

[20] McAloney, Thomas S., "The New Education and Its Relation to and Influence Upon the Education of the Blind," *A. A. I. B. Proceedings,* 1918, p. 6.

While the statement that "Our education, including most of our present curriculum and practices in schools for the blind, really fits a world of from fifty to a hundred and fifty years ago!"[21] is somewhat extreme, it cannot be denied that educators of children without sight have been content to cling to outworn aims, theories, and methods. This conservatism, which, as Ritchie says, is "so inveterate in its obstinacy,"[22] must give way to liberalism and open-mindedness if blind children are really to profit by their education. The old conception of education as a period of discipline, training, and preparation for future living must be replaced by the newer concept that education is life, and therefore, that it must consist of real experience and result in maximum individual social development.

Aims of Sight-Saving Classes.—The three major aims of sight-saving classes in the public schools are, according to Irwin:[23] (1) to provide instruction with a minimum of eye strain; (2) to teach children how to conserve the vision they possess; and (3) to provide such vocational guidance, and, if necessary, vocational training as will enable them to occupy a useful place in the community.

The first of these three objectives is obtained through the use of special apparatus and a suitably located and equipped schoolroom. The second aim is achieved through systematic instruction in ocular hygiene, while the third is accomplished through the work of a special guidance teacher and possibly a number of vocational instructors in coöperation with parents and school officials. The location and equipment of a sight-saving classroom, an outline of the principal methods employed in this work, and a critique of existing criteria for judging its effectiveness are presented in Chapter VI and, therefore, are not discussed here.

As a result of their close affiliation with the ordinary school grades, the curricula of sight-saving classes are, in most respects, similar to those of the regular public-school system. Since many activities in the elementary grades involve the frequent and prolonged use of vision, they are not well suited for sight-saving pupils, and other types of work must be substituted. In so far as possible, however, every partially seeing child participates in the program of the regular grade to which he is assigned, doing only such work in the special classroom as the condition of his vision makes necessary.

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[21] French, R. S., "The Function and Value of Research in Schools and Classes for the Visually Defective," *Outlook for the Blind,* December, 1928, p. 12.

[22] Ritchie, J. M., Op. cit., p. 122.

[23] Irwin, R. B., *Sight-Saving Classes in the Public Schools,* p. 16.

Even if the segregative plan is followed, whereby partially seeing children are taught entirely in the special classroom and do not join the regular grades for any type of work, the fact that these classes are, nevertheless, an integral part of the public-school system has the effect of making them more progressive. In the majority of instances, however, the coordinative plan is adhered to, and this provides that partially seeing children may benefit by many of the activities provided in the ordinary classes, and increases the necessity for their special instruction to parallel this work.

Unlike the education of the blind, that of the partially seeing began in the public schools, not in residential institutions, and this probably accounts for the fact that the latter generally are more up-to-date in educational theory and methods. While residential institutions have, in the past, been permitted to follow their own devices, sight-saving classes have always been under the direct surveillance of public-school systems. It was, and still is, possible to raise funds for the education of blind children through emotional appeal, but sight-saving classes generally have had to justify their existence through tangible results. The impression should not be gained, however, that sight-saving classes are beyond criticism. Inferior teachers employing outworn methods may undoubtedly be found in these classes and, as pointed out in Chapter VI, there may be some doubt as to the effectiveness of the sight-saving program in promoting conservation of vision in pupils after leaving school. Insufficient funds and inefficient supervision, also, may render sight-saving work comparatively ineffective, but in general it seems probable that their pupils are educated along much less formal lines and are better adjusted socially than are the pupils of most residential schools for the blind. In establishing methods of instruction in sight-saving classes an effort has been made to analyze the needs of partially seeing children and to base the program upon these rather than upon what is dictated by tradition. No curriculum, however, can be final and complete, but as it should represent life, so it should change as conditions of life change. Leaders in sight-saving work should not believe, therefore, that because they have established certain methods which seem feasible, no further alterations need be made. Lawes[24] strongly emphasizes this fact and points out, also, that the comparative recency of sight-saving classes in this country makes it impossible to state with finality what the best procedure is. This attitude toward change is refreshingly different from that found in many schools for the blind, and if it can be maintained, the education of partially seeing children in this country should continue to expand and to be even more successful in the future than it has been up to the present time.

Summary.—Religious instruction was a major objective in many of the early English institutions for the blind, and this, together with industrial training, constituted practically their entire course of study. In America the religious motive received less emphasis, but the vocational aim still was predominant, probably because of the poor economic condition of the blind at that time. The failure of vocational instruction to function adequately after pupils left school caused many American institutions for the blind to abandon the ultimate self-support of pupils as their principal objective and to stress the cultural aspects of education.

Recently, however, the utilitarian aim in the education of blind children has received more consideration, and it has been stated that unless the training provided for those without sight results in their economic efficiency, it is inadequate. It is practically impossible to find a clear statement of the objectives of elementary education for blind children. It is implied, however, that the elementary period should be one of preparation for vocational training or for higher education. This concept of education as preparation for future living rather than as life itself characterizes much that has been written concerning the teaching of blind children.

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[24] Lawes, Estella, *Method of Teaching Sight-Saving Classes,* p. 3.

The value of manual training probably has been greatly overemphasized in schools for those without sight. For example, the claim that it stimulates the brain cells through motor activity and that it is valuable prevocational training can hardly be justified according to modern theories. Formal sense training, also, has received much attention in the teaching of blind children, as it is believed that the other senses can be "trained" to compensate for the lack of vision. While it undoubtedly is necessary to aid blind children to appreciate natural phenomena which are obvious to those with sight, this can be done in an interesting manner.

There also is a tendency in schools for the blind to follow formal methods in teaching traditional subject matter, making it dull and uninspiring. While formal subjects cannot be dispensed with, it should be possible to make more provision for individual differences and to place greater emphasis upon pupil activity so that eventually the curriculum may parallel life experiences as closely as possible.

The social aim in the education of blind children is of utmost importance, although it is perhaps the most difficult to achieve in an institutional environment. The use of project work, socialized recitations, and the giving of information relative to economic and social interdependencies probably would be of assistance in this connection. Proper supervision of playground activities and outside contacts, also, should be helpful.

Elementary education for blind children should be thoroughly revised in accordance with the best theories and practices in the education of the seeing. Its results should be evaluated by statistical methods rather than by rhetoric, and, until this is done little progress will be made.

In general, day-school classes for blind children are more progressive than are residential schools, since the former are recognized as parts of city public-school systems. The fact that many residential schools are required to meet state standards does not necessarily mean that they are employing the best modern teaching methods.

The aims of public-school sight-saving classes are: (1) to provide instruction with a minimum of eye strain; (2) to teach the pupils how to conserve the vision which they possess; and (3) to provide vocational guidance and vocational education. These aims are accomplished by means of special apparatus and a suitably equipped classroom; by instruction in ocular hygiene; and by the services of vocational counsellors and instructors.

Although sight-saving classes are by no means beyond criticism, they generally are more progressive than are residential institutions for blind children. One reason for this may be that the former have always been an integral part of the public-school system and have had to justify their existence according to current standards.

Most sight-saving class pupils are able to join in many of the activities of the regular grades and thus are provided with an excellent opportunity for educational and social development. Such special methods as are necessary have been determined through a careful study of the needs of partially seeing children, and leaders in sight-saving work emphasize the fact that these methods must be flexible and must change constantly as conditions alter.

CHAPTER IV

PRE-SCHOOL AND KINDERGARTEN TRAINING FOR VISUALLY HANDICAPPED CHILDREN

Pre-School Training for Blind Children.—The importance of systematic pre-school training for blind children was recognized in Europe more than a century ago when, in 1830, the Silesian Association for Instructing the Blind published and distributed a pamphlet containing advice to parents and teachers of children without sight.[1] In the United States, Dr. S. G. Howe realized the value of careful pre-school education very early in the course of his work with the blind. In 1875 he outlined a comprehensive program for the pre-school training of young blind children which he believed would best promote their normal mental, physical, and moral development.[2]

Since the publication of Howe's treatise, considerable interest has been manifested in the pre-school blind child, and numerous articles dealing with the subject have appeared.[3–8] There also has been a movement to establish special residential nursery schools for blind babies, and in 1901 the first institution of this kind was opened in Boston,[9] similar nurseries being established later in Farmington, Connecticut, and Summit, New Jersey.[10] The New York Association for the Blind,[11] also, is interested in the welfare of blind babies, and the Chicago Lighthouse for the Blind[12] recently has taken up a special phase of this work. In Cleveland a visiting teacher locates blind children of pre-school age and assists parents in providing suitable training for them.[13] Home teachers in many states, whose work primarily is concerned with the rehabilitation of the adult blind, frequently are able, nevertheless, to be of great service in securing normal treatment for young children without sight.[14]

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[1] Knie, Johann G., *A Guide to the Proper Management and Education of Blind Children During their Earlier Years,* p. 15.

[2] Howe, S. G., *Counsels to Parents of Blind Children,* pp. 17-28.

[3] Johnson, Fanny L., "The Home Training of Little Blind Children," *The Mentor,* I, January, 1891, pp. 23-25.

[4] Allen, E. E., "To the Parents of Seeing and Blind Children," *The Mentor,* IV, April, 1894, pp. 135-140.

[5] Rees, Harriet, "Don't Let it Make Any Difference," *Outlook for the Blind,* II, Autumn, 1908, pp. 124-126.

[6] Halfpenny, Amy K., "Helps for the Mother of a Blind Child," *Outlook for the Blind,* Spring, 1914, pp. 41-46.

[7] Lewis, F. Park, "The Blind Child," *Outlook for the Blind,* Spring, 1916, pp. 5-9.

[8] Canadian Council on Child Welfare and Canadian National Institute for the Blind, *Advice to Parents of a Blind Child,* Canadian Council on Child Welfare Publication, Number 33, 1927.

[9] Anon., "The Story of the Boston Nursery for Blind Babies," *Outlook for the Blind,* Autumn, 1916, pp. 74-76.

Despite these special facilities and activities, provisions for pre-school blind children in this country still are inadequate. Thus, it was found recently that out of a total of 700 or more blind babies in the United States at the present time only 51 are being cared for in special nurseries.[15] Some of those not in nurseries, undoubtedly, are receiving adequate training in their homes, but many probably are being neglected. It should be noted, also, that the existing institutions for blind babies are all located within a comparatively small area, and thus serve only a very few of the widely scattered cases of children without sight. Of forty-three states, thirteen only make special provisions for blind babies.[16] It has been pointed out that the incidence of blindness among young children has decreased materially in recent years, as a result of the campaign against ophthalmia neonatorum and other ocular diseases of early childhood. While this may be true, it seems highly probable that there always will be a sufficient number of young children without sight to merit the special attention of educators of the blind.

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[10] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 15.

[11] "The Blind," *Special Education: The Handicapped and the Gifted,* p. 254.

[12] Miss Edith L. Swift is experimenting with toys for pre-school blind children.

[13] "The Blind," *Special Education: The Handicapped and the Gifted,* pp. 253-254.

[14] Foley, Kate, "The Home Teacher and the Child of Pre-School Age," *Outlook for the Blind,* December, 1927, pp. 41-44.

[15] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* pp. 14 and 15.

[16] *Ibid.,* p. 17.

Practically all writers on the subject of pre-school blind children, from the earliest to the most modern, emphasize: (1) the necessity of teaching blind babies to walk, talk, and care for themselves at an age comparable with that of seeing children; (2) the need of encouraging spontaneity and freedom of movement through normal activity and play with other children; (3) the need of providing suitable toys; and (4) the need of teaching the child to compensate for his handicap by directing his attention to tactual and auditory phenomena, and supplementing his observations with careful and complete verbal descriptions.

There is no reason why an otherwise normal blind child cannot learn to walk, and to perform simple tasks for himself at the same age as seeing children, if parents can be persuaded to teach and encourage him. The difficulty is that most parents feel that because their child is blind he is, therefore, quite helpless and must always be dependent upon some one else. The fear that the blind child will run into or fall over furniture and other objects, also prevents many parents from allowing their blind children to move about freely. If care is taken, however, to warn the child when he is approaching danger, and all unnecessary obstacles are removed from his path until his self-confidence is developed, little difficulty of this nature will be encountered. As Howe[17] pointed out, a few cuts and bruises are better than total helplessness, and the child without sight soon learns his way about with but few accidents.

Much stress has been laid upon allowing the blind child to participate as far as possible in all kinds of normal activity. He should be provided with suitable toys and play materials, although there is no complete agreement as to what these should be. The consensus of opinion is that play materials which appeal especially to hearing and touch are best suited to the needs of pre-school blind children,[18] but this conclusion appears to be based only upon empirical judgment. An investigation using bi-dimensional animal models[19] indicates that these have little meaning for older blind children, and the writer found similar results in an experiment designed to determine the value of embossed pictures.[20] It seems unlikely, therefore, that such materials would be suitable for children of pre-school age. Whether or not "sound toys" are most desirable for young children without sight is a question yet to be answered. Furthermore, there is no conclusive evidence to show which tactual qualities are most desirable in toys for pre-school blind children. For example, is smoothness, roughness, hardness, or softness preferable in certain types of toys? What shapes are best for such toys, and what sizes should they be? Experiments now in progress may be of assistance in answering some of these questions,[21] or, at least, in providing a stimulus for further investigation. It must be remembered, however, that *all* the play materials of the pre-school blind child need not be different from those in common use among young seeing children. Swings, seesaws, and sandboxes should be as available to blind children as to those who see. Ordinary blocks and balls, also, can be used, as well as modeling clay and similar means for creative activity.

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[17] Howe, S. G., Op. cit., pp. 18 and 19.

[18] Altmann, Siegfried, "Psychological Problems of the Pre-School Blind Child," *Proceedings of the World Conference on Work for the Blind,* p. 30.

Most writers emphasize the value of play with seeing children as a means of socializing the young blind child,[22, 23] encouraging spontaneity and freedom of movement in him, and minimizing the importance of his handicap in his own estimation and in that of others. Howe suggests the advisability of having the blind child attend a primary school with seeing pupils before he enters an institution for the blind in order further to promote his social development.[24] There are those, however, who feel that too much association with seeing children is harmful for the child who is blind.[25] It is pointed out that, since he cannot enter completely into all the play activities of those who see, he tends to develop a sense of inferiority which may have undesirable emotional consequences. This may possibly be the case among older children, but it seems rather unlikely that it would occur very frequently among those of pre-school age. Their play is comparatively simple, and the blind child of normal intelligence should have little difficulty in adapting himself without emotional disturbance.[26]

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[19] Merry, Frieda Kiefer, "A Study of the Merits of Animal Models Used in Teaching Blind Children," *The Teachers Forum,* II, January, 1930, pp. 12-13.

[20] Merry, R. V., "To What Extent Can Blind Children Recognize Tactually Simple Embossed Pictures?" *The Teachers Forum,* September, 1930, pp. 2-5.

[21] Work on the aesthetics of touch is being done by Miss Kathryn E. Maxfield of Perkins Institution.

[22] Villey, Pierre, *La Pedagogie des Aveugles,* p. 108.

[23] Howe, S. G., Op. cit., p. 24.

[24] Ibid., p. 23.

In addition to play activity, it is generally agreed that the blind child should learn to perform simple tasks, not only in self-care, but also in the interests of others. Simple errands to different parts of the house and helping to care for younger children are examples of such occupations. Although it is well to encourage blind children to do all that their handicap permits, care should be taken not to assign tasks which their lack of vision may prevent them from accomplishing. There also may be the danger of expecting too much from a blind child and overstimulating him. For example, Howe advocates that the blind child be taught to read embossed type by the age of six.[27] Despite the undeniable fact that most blind children are academically retarded during school years, the pre-school period is not the time to attempt to compensate for this retardation. It probably is dangerous to require even a mentally superior blind child to do academic work prior to the sixth year, to say nothing of the child of average ability.

There has been considerable theorizing concerning the promotion of sensory compensation in young blind children. Little actually is known, however, as to the best method to be followed and the extent to which compensation can take place. Whether or not data from other senses can replace visual experience in the psychological development is a question which it is difficult to answer. It seems probable, however, that a certain amount of compensation is possible, since many congenitally blind children exhibit normal psychological growth. Most writers on the pre-school training of children without sight agree that compensation can and should be assisted during this period by directing the child's attention to the tactual and auditory qualities of various objects and phenomena, and by describing in detail those things which cannot be brought within the range of his remaining senses.[28] The need of talking with the young blind child more than with one who sees, also is stressed in order to prevent him from feeling isolated and outside the family group.[29]

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[25] Steinberg, Wilhelm, "Der Blinde als Persönlichkeit," p. 85.

[26] The blind child can be *taught* to play games with seeing children. Consult: Villey, Pierre, Op. cit., p. 112.

[27] Howe, S. G., Op. cit., p. 23.

Unfortunately, the rights of the young blind child to an opportunity for growth and development frequently are denied him. He is not encouraged to exert any mental or bodily activity, and is allowed to develop undesirable mannerisms.[30] It is not surprising, therefore, that such children sometimes are thought feeble-minded and even idiotic, and that their blindness is believed to be responsible for this. When these children at last enter a school for the blind, they have to spend valuable time making up for the years of pre-school inactivity, and thus their already serious retardation is increased. It should not be thought that these conditions always are the result of wilful neglect on the part of parents. In a few cases this may be true, but in the majority ignorance or over-solicitude is responsible. Parents are either at a loss what to do with a blind child or adopt a highly emotional attitude toward him, feeling that no amount of service, petting, and spoiling can make up for his "terrible affliction." They do not realize that in this way they are adding to his handicap and materially lessening his chances of overcoming it in later life.

In view of these facts, parental education seems to be one of the most important problems in connection with the pre-school blind child. Even if residential nurseries could be so extended as to be in a position to receive all pre-school children without sight, it is questionable if this would be the most satisfactory solution. Many parents would refuse to send their blind children away from home at so early an age unless a state law compelled them to do so, and such a law would not be easy to enforce. Furthermore, it is questionable whether or not an institutional environment is best for children of pre-school age. It has been said, for example, that the family is essential to normal emotional development and that this element is lacking in a residential nursery school.[31, 32] The recent statement that "institutional care for the most part has produced uninspired individuals poorly adjusted to the outside world"[33] is an additional argument in favor of home environment. It is true, of course, that there are a few homes which are undesirable either for blind or seeing children. In such cases, however, a foster home might be found which would be preferable to institutional care. The state should provide special funds for this, as well as for the salaries of special field officers engaged in educating the parents of pre-school blind children. These field workers should be tactful and sympathetic in order to win the confidence of parents who frequently resent interference with what they consider their private affairs. To assist this work further, it has been suggested that regional clinics for handicapped children be established where pre-school blind children might be brought for examination, and where parents might be instructed concerning their care.[34] It is pointed out that parents often are willing to bring children to clinics and accept advice from those whom they consider authorities, rather than from visiting field workers.

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[28] Knie, J. G., Op. cit., p. 17.

[29] Canadian Council on Child Welfare and Canadian National Institute for the Blind, Op. cit.

[30] Gesell, Arnold, *The Pre-School Child,* Houghton Mifflin Company, Boston, 1923, p. 107.

The foregoing is not intended as a reflection upon the excellent work of nurseries for blind babies. The most satisfactory solution of the problem, however, does not appear to be in the multiplication of these institutions, but rather in the better home adjustment of pre-school blind children.

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[31] League of Nations Health Organization, *Report on the Welfare of the Blind in Various Countries,* p. 27.

[32] Altmann, Siegfried, Op. cit., p. 2.

[33] "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection,* p. 134.

[34] Stinchfield, S. M., "The Border-Line Child and his Problems," *A. A. I B. Proceedings,* 1924, p. 182.

Residential nurseries, nevertheless, offer the best facilities for research in the pre-school education of children without sight, although the enrolments generally are small. If intensive studies could be undertaken at these institutions in connection with such questions as the most suitable play materials for young blind children and how far the generally accepted program for pre-school seeing children could be adapted to the needs of those without sight, it might be possible to secure much useful information. The chief problem, however, is to provide every blind child of pre-school age with an opportunity for maximum physical and mental development through normal activity. Until this is done, the blind child is being discriminated against unfairly, and his handicap is being increased rather than minimized.

Kindergarten Instruction for Blind Children.—Organized kindergarten instruction for blind children in this country began with the establishment of the Perkins Kindergarten at Boston[35] in 1887 through the efforts of Michael Anagnos.[36] Since that time other institutions have taken up this work, until at present there are eighteen residential schools which have kindergarten departments, while twenty-five include this training in the regular first-grade program.[37]

The first kindergarten training for children without sight followed Froebelian principles and methods closely, not only because these were in vogue at that time, but also because Froebel's materials (except for the element of color) seemed admirably adapted for blind pupils.[38] Despite the fact that Froebel's first two principles, self-activity and social coöperation, are those underlying modern kindergarten and primary instruction, the methods he chose for carrying out these principles tended to differ little from those of the extreme formalists of his day.[39] This formalism, with its belief in faculty psychology, was reflected in the development of kindergarten training for blind children and seems to have persisted there after being abandoned generally among progressive educators of the seeing. Froebel's third principle of symbolism, also, has been generally discarded in favor of project work representing actual life situations, yet his symbolic materials are used even now in eight of fourteen kindergartens for the blind.[40]

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[35] *Fifty-sixth Annual Report of the Trustees of the Perkins Institution and Massachusetts School for the Blind,* Wright and Potter, Boston, 1888. (Consult section on: "First Annual Report of the Kindergarten for the Blind," pp. 122-124.)

[36] Successor to Dr. S. G. Howe as Director of Perkins Institution.

[37] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 33.

[38] *Fifty-first Annual Report of the Trustees of the Perkins Institution and Massachusetts School for the Blind,* Wright and Potter, Boston, 1883, p. 24.

In addition to the formal use of the Froebelian materials there has been a tendency to introduce into the kindergarten training of blind children knitting, bead-stringing, simple weaving, sewing cards, use of peg boards, Montessori buttoning and lacing frames, and geometric insets because of their supposed value as "hand training" and as preparation for finger reading.[41] Since recent investigations indicate that manual skills are highly specific[42, 43] it seems doubtful if there is much transfer from expertness in bead-stringing to skill in the tactual recognition of Braille characters. There undoubtedly are many children entering schools for the blind who are inferior in neuro-muscular coördination because of lack of opportunity for normal physical growth. Such children require special exercises to increase their general nervous and muscular development, but it is questionable if these should take the form of training in specific skills. Villey does not approve of knitting as a means of manual training because it is too difficult and possesses little general developmental value.[44]

[39] Pechstein, L. A., and Jenkins, Frances, *Psychology of the Kindergarten-Primary Child,* Houghton Mifflin Company, Boston, 1927, p. 31.

[40] This information was obtained from a survey of fourteen kindergartens for blind children made by the Department of Special Studies, Perkins Institution, in December, 1931 (unpublished).

[41] Poulsson, Emilie, "The Blind Children's Kindergarten," reprinted in *Appendix to Fifty-second Annual Report of the Perkins Institution and Massachusetts School for the Blind,* 1884, p. 31.

[42] Kiefer, Frieda A., "Manual Motor Correlation in Superior Children," *The Journal of Applied Psychology,* XIII, August, 1929, p. 370.

[43] Muscio, B., "Motor Capacity with Special Reference to Vocational Guidance," *British Journal of Psychology,* XIII, 1922, p. 175.

[44] Villey, Pierre, Op. cit., p. 45.

A survey of fourteen kindergartens for blind children showed that only three could be rated as highly progressive, while four ranked as average judged according to aims, use of formal content, and amount of project work. The remaining seven were rated as distinctly backward because of their excessive use of formal material.[45]

The assumptions concerning methods of "hand training" for blind children of kindergarten age should be checked by means of thorough experimentation. It might be possible, for instance, to select two groups of children, one being given the usual formal instruction, the other only general exercises and project work. The progress of the two groups in beginning Braille reading could then be compared, and it could be ascertained whether or not the reading ability had been improved by formal hand training. The chief difficulty with an investigation of this nature would be the small number of blind kindergarten children available, and their wide range in chronological age, mentality, and pre-school care. If co-operation from several schools could be enlisted, however, it might be possible to work out an experiment whose results would be more satisfactory then the empirical judgments which have thus far determined the type of kindergarten training for blind children.

Whether or not a certain amount of hand training is desirable for children without sight, there seems to be no sound reason for adhering to worn-out methods such as the symbolism of Froebel. Project work in schools for the blind has been tried with success among older pupils and may be equally effective with kindergarten children. In order to maintain their value, however, projects must be of such a nature that they can be carried out by blind children with a minimum amount of assistance from the teacher. There may be a tendency to select too elaborate an undertaking involving types of work which blind children cannot do and which must be done by teachers or other seeing assistants. While the results of such projects may be more impressive than those of a simpler type, they not only create erroneous ideas concerning the abilities of blind children, but also detract materially from the value of this work. As Pechstein and Jenkins[46] emphasize, the modern kindergarten should aim to have the children plan and execute activities according to their own ideas under the *guidance* but not the *direction* of the teacher. Wide individual differences among young blind children may make this more difficult than with those who see, but if the teacher is skillful it should be possible to have all the pupils participate in activities commensurate with their abilities and experience.

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[45] Consult footnote 40 for the source of these data.

The present trend among educators of the seeing is toward the unification of nursery school, kindergarten, and primary education,[47] so that the children may pass from one to another without any fundamental changes. This is somewhat more difficult with blind children, chiefly because of the lack of organized nursery-school education, although as mentioned previously, twenty-five schools combine kindergarten training with first-grade work. The early education of young blind children, however, should be based primarily upon individual needs if it is to be an efficient means for general development. Thus, some children enter school with an excellent home training which enables them to pass through the period of kindergarten instruction in a comparatively short time. Others enter with little or no pre-school experience, and must spend a relatively long time in the kindergarten before being given instruction in elementary subjects.

The introduction of first-grade work, therefore, and the promotion rate of blind children in the primary grades should be determined by individual needs rather than by a fixed amount of time spent upon each phase of the program. It is unfair to a bright blind child, whose pre-school development has been normal, to keep him in the kindergarten too long, thus increasing the degree of educational retardation which obtains among blind children generally. On the other hand, a child without sight who has not had adequate pre-school experience should be given every opportunity for mental and physical development before he is expected to enter upon regular school instruction. Until satisfactory preschool treatment can be secured for all blind children, therefore, and until those who are mentally deficient can be separated from the intellectually normal, kindergarten and primary education for children without sight must be an individual matter.

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[46] Pechstein, L. A., and Jenkins, Frances, Op. cit., pp. 187-194.

[47] Davis, Mary Dabney, *Nursery-Kindergarten-Primary Education in 1924-1926,* Department of the Interior, Bureau of Education Bulletin, 1927, Number 28, p. 46.

The social element of kindergarten education need not, however, be entirely neglected. Simple project work within the capacities of all pupils provides an opportunity for social coöperation as well as games and similar activities. Experimentation with various methods of introducing socialization into the kindergarten program for blind children and allowing for progress according to individual capacities probably would yield valuable results. Ultimate success or failure, however, lies chiefly with the teacher, since it is she who guides the children and is responsible for their educational and social progress. It is of utmost importance that the kindergarten teacher of blind children should not only know and understand modern aims and methods, but also should be thoroughly familiar with problems peculiar to children without sight, and should have sufficient ingenuity to cope with them successfully. The kindergarten and primary period is of major significance in the education of blind children, since upon it depends much of their future school accomplishment. Educators of these children, therefore, should strive to have kindergarten equipment and teaching personnel at the highest possible level of efficiency, and should seek to replace antiquated theories and methods with modern aims and ideas.

Pre-School and Kindergarten Facilities for Partially Seeing Children.—The attention of sight-saving class enthusiasts has been devoted almost exclusively to partially seeing children in the upper elementary grades and there is little information, therefore, regarding pre-school and kindergarten facilities for these children. It has been recommended recently, however, that pre-school ocular examinations should be given to *all* children so that the presence of visual defects may be discovered and treated as early as possible.[48]

There appears to be no good reason why much of what has been said concerning the general pre-school treatment of blind children should not apply equally to that of children with partial vision. There is, of course, less likelihood that parents will adopt so unfortunate an attitude toward a child who apparently can see quite well. The chief danger lies in the possibility that the visual defect will not be recognized at all until the child enters school, and that he will be allowed to use his sight in a manner which will make the defect more serious. Even after he has entered school there is danger that his trouble may be unnoticed unless competent ophthalmological examinations form part of the school health program.

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[48] Lewis, F. Park, *What Every One Should Know About Eyes,* p. 16.

It seems probable that the partially seeing child can benefit by much of the ordinary nursery school and kindergarten education provided for those with normal vision. If his defect is recognized and the teacher is made to understand its importance, there will be no more danger in school than in remaining at home.

It is of interest to note that certain of the residential nurseries intended primarily for the care of blind babies are receiving children with curable ocular troubles and through careful medical attention are not only preserving the sight of these children, but also are improving it to an extent which requires no further special care. This fact illustrates again the importance of early diagnosis and treatment of visual defects in children.

There is an evident need for study of the problems concerning pre-school and kindergarten education for partially seeing children. If there are sufficient numbers of these in most large communities to form special classes when they are old enough to attend the regular public school, why should there not be enough to form special nursery schools and kindergartens? Since the fundamental aim of sight-saving classes is the prevention of blindness, and since prevention is most effective during early years, it would seem justifiable to devote more time and attention to younger children with partial sight. As the trend in the education of children with normal vision is toward increased emphasis on the pre-school and kindergarten period, it seems probable that those in charge of sight-saving work soon will turn their attention in this direction.[49]

Summary.—The importance of pre-school training for blind children was recognized in Europe more than a century ago and in America as early as 1875. Since then, general interest in this problem has increased, but pre-school facilities for children without sight still are inadequate. Residential nursery schools such as the one in Boston have been established, but these are situated within so limited an area and accommodate so few children that they serve only a small proportion of the seven hundred or more blind children who need pre-school training. While these residential nurseries do excellent work, it probably is wiser to attempt a solution of the pre-school problem through parent training and the services of a field officer. It has been stated that it is depriving a blind child of his most important means of normal emotional development by removing him from the home environment at too early an age.

Most writers on pre-school training for blind children emphasize the need of providing normal mental and bodily activity for the child without sight and insist that he should be taught to walk and to perform simple tasks for himself at the same age as seeing children. The unfortunate attitude which some parents exhibit toward their blind offspring frequently results in the latter being prevented from engaging in any form of natural activity because of over-solicitude or ignorance. This inactivity throughout the entire pre-school period may make the blind child appear feeble-minded, although his mental equipment may be normal. When he enters school valuable time must be spent in making up for pre-school neglect, thus producing serious educational retardation.

Kindergarten training for blind children was begun in this country in 1887 through the efforts of Michael Anagnos. Eighteen residential schools now have kindergarten departments, while twenty-five combine this work with the regular first-grade program. The tendency at the beginning of kindergarten work for children without sight was to follow Froebel's principles which had become formalized in practice. Kindergartens for blind pupils, also, have introduced other formal exercises which are supposed to possess value as hand training and to prepare for beginning Braille reading. Experiments should be devised to discover the actual value of these formal exercises as a means of developing general manual skill. While some project work has been introduced, kindergartens for the blind still adhere to methods which have been discarded among progressive educators. The wide range in age and ability among blind kindergarten children makes the introduction of project work, in which all can take part, a rather difficult problem. It is important, however, that projects be chosen which can be completed by the children themselves with a minimum amount of assistance from the teacher.

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[49] Chambers, Mildred Smith, "Conserving Vision in the Nursery School and in the Kindergarten," *The Sight-Saving Review,* I, March, 1931, pp. 44-50.

The unification plan, by which nursery school, kindergarten, and primary training are combined into a single unit, does not seem feasible for blind children because of the lack of organized pre-school training and the consequent variations in the developmental status of kindergarten pupils without sight. Individual needs, therefore, should be the basis for this work among blind pupils, although the social element must be considered. The teacher probably is the greatest single factor in successful kindergarten and primary work with blind children. It also is necessary that educators of the blind realize the importance of the kindergarten period and adopt new and better methods.

Except for the pre-school testing of eyes, little attention appears to have been paid to the early training of partially seeing children. Much of what has been said concerning pre-school care for the young blind applies, also, to children with partial vision. An important difference, however, is that the latter should be taught to conserve their sight from an early age. It seems probable that much of the nursery school and kindergarten program designed for children with normal vision can be followed with safety, provided the teacher understands the visual defect and prevents any chance of eye strain. There is need for more thorough study of the pre-school and kindergarten treatment of partially seeing children, and there is evidence that the attention of sight-saving workers is being directed toward pre-school and kindergarten problems.

CHAPTER V

THE EDUCATION OF BLIND CHILDREN IN DAY-SCHOOL CLASSES AND IN RESIDENTIAL INSTITUTIONS

Day-School Classes Versus Residential Institutions.—The opening of day-school classes for blind children in Chicago[1] in 1900 and their subsequent spread to other cities resulted in a certain amount of controversy between the advocates of this innovation and those in favor of the residential institutions. Frank H. Hall, whose efforts were responsible for the organization of the Chicago classes, believed firmly that the institutionalization of blind children constituted a handicap in later life even more serious than lack of vision. He felt that the institution could never provide a truly normal social environment and that children educated wholly in this way would be unable to adjust themselves to the exigencies of ordinary society.

Protagonists of the institutions replied that a special environment was necessary for the education of blind children and that residential schools were far better fitted to cope with the individual problems than were the day-school classes.[2] They emphasized the fact that many blind children require a period of adjustment prior to the beginning of formal education, and insisted that the day schools were not in a position to meet this need.

Discussion of Arguments for the Day School.—A cursory examination of the statements on p. 68 shows an apparent advantage in favor of day-school classes. Their chief argument is that the blind child is not institutionalized, viz., that he is not made to feel dependent upon the rest of society and led to believe that it is the duty of others to supply him with the necessities of life. It must be admitted that many years of residence in an institution may foster the idea in blind children that the world owes them a living and that their

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[1] Curtis, John B., "The Inventor of the Hall-Braillewriter," *Outlook for the Blind,* June, 1927, p. 5.

[2] French, R. S., "The Case for the Residential School," *A. A. I. B. Proceedings,* 1930, p. 456.

DAY-SCHOOL CLASSES

Summary of Arguments Pro and Con

Pro[3]

1. The child does not become institutionalized.
2. The child does not become a stranger in his own home.
3. Parents are more willing to send blind children to a day school than to an institution.
4. Day-school classes are a part of the regular educational system and their standards are recognized.
5. The public has a better opportunity to become acquainted with what blind children can do.
6. The maintenance cost of day schools is only about one-half that of institutions.

Con[4]

1. Cases of blindness are so few and scattered that central institutions are necessary.
2. There is no need for guides in an institution.
3. Blind children do not necessarily become socialized in a day school.
4. The institution can cater better to individual needs.
5. The institution can afford better special apparatus.

blindness entitles them to expect support from those who see.[5, 6] Such an attitude is, of course, deadening to personal effort and ambition[7] and, when present, causes blindness to be associated with social parasitism in the minds of physically normal individuals. It has been stated, also, that life in a residential institution has a tendency to color the personalities of blind children, making them different from children who see.[8]

The second argument in favor of the day school, viz., that the child does not become a stranger in his own home, also appears to possess considerable validity. It seems reasonable to suppose that a child who is absent during ten months of the year except for short vacations, will lose contact with his family.[9] Furthermore, such long absences over a period of several years are likely to affect the attitude of the parents, and lead them to feel that another agency has assumed responsibility for him, relieving them of all parental obligations.[10] In the day-school classes, however, normal home relationships can be maintained. Meyer[11] stresses the importance of these home contacts, pointing out that they give the blind child an appreciative understanding of the economic problems of the home, and stimulate him to make an effort toward self-support. He also gains an understanding of normal social relationships between the sexes which the residential institution with its more or less strict segregation cannot provide. To the objection that blind children frequently come from such poor homes that institutional life is preferable, it is replied that this is no longer true since the advent of social service.[12] The home and family situation is necessary for any child's normal development, and although the institution may be palatial, it cannot be a completely satisfactory substitute.[13]

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[3] Best, Harry, *The Blind,* pp. 309-310.

[4] *Ibid.,* pp. 310-311.

[5] Glover, D. W., "How Can Residential Schools for Young Blind Be More Helpful in Preparing their Pupils for Life," *A. A. W. B. Proceedings,* 1925, p. 71.

[6] Allen, E. E., "Some Present-Day Aims and Methods in the Education of the Blind," *Outlook for the Blind,* IX, Autumn, 1915, pp. 48-51.

[7] Paterson, J. G., "Elements of Strength and Weakness in the Education of Blind Children in Schools for the Seeing and in Schools for the Blind," *Outlook for the Blind,* VII, Winter, 1914, p. 122.

[8] Stinchfield, Sara M., *The Psychology of Speech,* p. 269.

The experience of home teachers and field officers substantiates the argument that parents of blind children prefer to send them to a public day school rather than to a residential institution. Although parents are said to lose interest in their blind offspring after the latter have begun attending residential institutions, most of them are extremely unwilling to part with their children at the outset.[14] In states where there is no law compelling blind children to attend school they often are allowed to remain at home until they have become seriously retarded educationally. In most instances, it is relatively easy to persuade parents to send their blind children to day-school classes since they understand the public-school system to some extent, whereas they may regard residential institutions with suspicion.

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[9] Curtis, John B., "Instruction of Blind Children in Schools for the Seeing," *A. A. I. B. Proceedings,* 1910, pp. 37-38.

[10] Burritt, O. H., "Coeducation of the Blind and Sighted: Education of Blind in Schools with the Seeing," *Outlook for the Blind,* IV, Winter, p. 173.

[11] Meyer, G. F., "Some Advantages Offered Children in Day School Classes for the Blind in the Public Schools," *Outlook for the Blind,* March, 1929, pp. 9-15.

[12] Bingham, Gertrude E., "The Education of the Young Blind in Institutions Versus in Schools with the Seeing—The Advantages and Disadvantages of Each," *A. A. I. B. Proceedings,* 1910, pp. 39-40.

[13] Rich, Frank M., "Blind Children in Public Schools," *Outlook for the Blind,* XX, March, 1927, p. 28.

The fact that day schools are an integral part of the regular system of public education with generally recognized standards is a significant point in their favor. Of course, when residential institutions are under the control or supervision of State Boards of Education, their curricula and methods usually conform quite closely to those of special public-school classes. Nevertheless, there has been, and still is, a tendency on the part of many residential institutions not directly controlled or influenced by state educational authorities, to follow their own devices.[15] It is not claimed, of course, that standardization of curricula is desirable, as some educational freedom is necessary. Nevertheless, if certain levels of educational achievement are to be maintained, there must be certain minimum standards. Thus, if blind children are to become normal members of society they must acquire knowledge and skill similar to those of others. Furthermore, graduates of residential schools who wish to pursue higher education will find themselves handicapped seriously if their preparatory training has differed too widely from the accepted standards for college entrance. It is neither possible nor advisable to prepare all blind pupils for college entrance, but if schools for the visually handicapped are to offer the customary type of secondary education, this should lead to goals similar to those of the ordinary high school. If the education of blind children is to receive equal recognition with that of seeing children, it must follow current standards until such time as a system of greater freedom is evolved wherein standards are less important.

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[14] Foley, Kate, "The Home Teacher and the Child of Pre-School Age," *Outlook for the Blind,* December, 1927, p. 42.

[15] French, R. S., "The Function and Value of Research in Schools and Classes for the Visually Defective," *Outlook for the Blind,* December, 1928, p. 12.

It is probable that the day-school class is a more effective agency for educating the public concerning the abilities of blind children than is the residential institution, since day-school pupils have greater opportunities for normal contacts in their community. The institution welcomes visitors and frequently gives special demonstrations, but these do not always reflect accurately the actual accomplishment of blind children. Furthermore, as Howe[16] pointed out in 1851, the effect of special exhibitions upon blind pupils is not good, and, in addition, they tend to strengthen the misconception that those without sight form a peculiar class, distinct from society as a whole. On the other hand, casual visitors to day-school classes are likely to gain erroneous ideas, attaching undue importance to minor details and overlooking the significant accomplishments of the pupils.[17]

The relatively low maintenance cost of day-school classes as compared with that of residential institutions is generally regarded as an outstanding advantage in favor of the former.[18] If it could be proved conclusively that day-school classes are equal or superior to residential institutions in the education of *all* blind children, the low-cost factor undoubtedly would be significant. Until such proof is forthcoming, however, this aspect of the situation must not be considered too seriously. In any educational program it is difficult to compare present costs with ultimate values, and if day-school classes do not and can not meet the entire needs of every blind child, then the existence of other types of schools is justified irrespective of cost.

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[16] Howe, S. G., *Nineteenth Annual Report of the Trustees of the Perkins Institution and Massachusetts Asylum for the Blind,* Metcalf and Company, Cambridge, 1851, p. 20.

[17] " 'Come and see these darlings wash their hands,' called a visitor enthusiastically to her companion, after watching without comment the same darlings mold in clay a map of North America." Consult Paterson, Janet G., "Education of the Blind Child in Public Day Schools," *Outlook for the Blind,* Spring, 1921, p. 74.

[18] "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection,* p. 233.

Arguments Favoring the Residential Institution.—The assertion that cases of blindness are so few and scattered that it is impossible for day-school classes to reach all of them is probably the most valid argument in favor of residential institutions. In small towns and rural communities where there may be only two or three blind children, the opening of a day-school class would hardly be practical. This objection is met by two proposals. First, it is urged that each state provide special scholarships for its blind children. Day-school class centers could then be established in accordance with the number of blind children in each community, the scholarship being used to defray the expense of attendance. Daily transportation could be provided for a majority of the pupils, and in cases where distance prohibited this, special boarding arrangements could be secured.[19] The difficulty with this plan is that the extra time and fatigue involved in transportation may be too great a tax upon the strength of pupils. Furthermore, unless boarding arrangements are under competent supervision, they may be more injurious to the children than any institutional atmosphere, and thus remove the greatest advantage claimed for day-school attendance.[20]

The second proposal is to follow a plan adhered to in some parts of England,[21] viz.: to have blind pupils attend the ordinary schools, placing them in regular classes with seeing companions, no special teacher nor other special facilities being provided. It is not made clear how these blind pupils are to learn Braille and the use of various kinds of apparatus designed to aid in their instruction. Probably home teachers would be expected to teach them these necessary fundamentals either prior to their entrance to the ordinary school, or as a supplement to their regular school program. With a combination of exceptionally bright blind pupils and superior teachers this plan might work satisfactorily, but under ordinary conditions it may not be effective. The teacher might allow the blind pupil to dawdle and waste time unless she had an intelligent understanding of the problems arising from his lack of sight, which would prevent her from assuming an ultra-sympathetic attitude.

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[19] Horn, J. L., *The Education of Exceptional Children,* pp. 278-279.

[20] A special training cottage such as that in Cleveland has been suggested to meet this objection. Consult: Irwin, R. B., "Recent Developments in Public School Work for the Blind," *Outlook for the Blind,* Summer, 1917, p. 30.

[21] Ritchie, J. M., *Concerning the Blind,* p. 80.

The residential institution, however, is able to accommodate blind children regardless of distance. Kerr,[22] a thorough believer in day schools for blind children, admits that residential schools are an administrative convenience, although he maintains that they are educationally incomplete. The charge of educational incompleteness may be justified to some extent, but residential institutions are more than a mere convenience. In a country as large as the United States, where in certain sections the population is spread thinly over wide areas, centralized, self-contained schools for blind pupils are an administrative necessity. In large cities day-school classes perhaps are preferable,[23] but if this system cannot be extended to include the blind child in a rural community, then some kind of central institution must be maintained. Horn believes that city day-school classes, also, should be centralized in order to function efficiently. This opinion, however, is based principally upon experience with classes for the mentally subnormal, the problems of which are somewhat different from those of day-school classes for the blind.

The question of providing guides to accompany blind children to and from school is one which must be faced by those in charge of day-school classes. This is not a problem in a residential institution, however, since blind children quickly learn their way about buildings and grounds. Nevertheless, supervisors of day-school classes maintain that seeing school children are willing to act as guides at a small fee.

The claim that blind children do not necessarily become socialized by attending a day-school class seems to have considerable justification. The degree to which socialization actually takes place appears to be governed largely by the administrative policy under which day-school classes operate.[24, 25] Supervisors of day-school classes assert that in most instances where blind children are encouraged to participate in normal school activities their social adjustment is satisfactory. The statement even has been made that anyone casually passing the playground would have difficulty in distinguishing the blind from the seeing children.

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[22] Kerr, James, *The Fundamentals of School Health,* The Macmillan Co., New York, 1927, p. 540.

[23] Horn, J. L., Op. cit., p. 287.

However, unless a definite policy is followed, there is a very real danger that blind children attending day-school classes will not be well socialized. Unless they are encouraged to mingle with seeing companions they may remain in a group by themselves, and may develop a sense of inferiority and a grudge against the seeing children who fail to accept them as social equals. Seeing children have a definite tendency to regard blind children as "queer," and seldom make overtures toward them unless encouraged to do so. When they once discover that lack of sight does not prevent the latter from joining in their games and sharing their interests aloofness generally disappears.

Steinberg[26] believes that it is impossible for a blind child to become socially adjusted among seeing children. He thinks that there are always some phases of normal activity in which the blind child cannot participate, and that this will result in feelings of inferiority which eventually may have anti-social consequences.[27] A residential school for the blind, where a child can compete upon equal terms with children having the same handicap is, in Steinberg's opinion, the only means of providing normal social development.

However this may be, it seems obvious that socialization cannot be obtained automatically by putting blind children into classes in the public day schools. Although there is truth in Steinberg's claim that blind children cannot join in *all* the games of their seeing associates, it must be remem-

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[24] Coffin, Helen; Brockway, Ruth; Hartman, Harry; Laing, Martha; Strom, Jennie; and Ware, Mildred, "Social Education of Blind and Sight-Saving Class Pupils Attending the Public Schools of Cleveland, Ohio," *Outlook for the Blind,* Autumn, 1921, pp. 126-129.

[25] Irwin, R. B., Op. cit., p. 26.

[26] Steinberg, Wilhelm, "Der Blinde als Persönlichkeit," p. 86.

[27] Another writer believes that coeducation of blind with seeing children accentuates the handicap of the former. See Horn, J. L., Op. cit., p. 285.

bered, also, that not *all* seeing children participate in playground activities.

Whether this inability must, necessarily, result in a sense of inferiority in children without sight is a question which can be answered only by careful investigation. Granted that such a sense of inferiority is created, will it be more detrimental to personality development than constant association with children of a similar handicap under institutional conditions?

It cannot be denied that, under certain conditions, the residential institution is better able to meet individual needs than is the day-school class. In cases where sight is lost through accident or disease during late childhood or early adolescence, a period of adjustment frequently is required before ordinary school work can be taken up. A newly blinded individual must first become accustomed to the changed conditions under which he will have to live henceforth. He must master tactual reading and learn to use various types of tangible apparatus and, also, learn to substitute hearing and touch for vision. Furthermore, he must be led to realize that physical blindness need not, necessarily, incapacitate him.

The day-school class which is maintained primarily for the academic instruction of blind pupils is not in a position to devote much time to individual needs such as those just described. In the residential institution, however, there is generally excellent opportunity for adventitious cases of blindness to become adjusted to their new circumstances. They find that other blind individuals can do many things successfully, and gradually develop an attitude of self-confidence and a desire for achievement. Certain institutions have had sufficient foresight to provide special adjustment rooms where newly blinded children may be taught apart from the regular classes.[28] In this way such children are not discouraged by unfair competition with classmates who have been in school a number of years. Whether adjustment rooms are provided or not, however, children whose sight has been lost recently, usually receive a certain amount of individual attention in residential schools. It may be asked why day schools could not have these special adjustment rooms which would serve a similar purpose. The answer is that, in most instances, there would be but one or two pupils to occupy such a room, since the enrolment of most day-school classes generally is comparatively small. To maintain a special room and teacher for one or two pupils would hardly be justifiable. Furthermore, some newly blinded children need longer periods of adjustment while others become accustomed to their handicap in a relatively short time. Thus, while an opportunity room ought always to be in readiness, there might be times when there would be no one to take advantage of it. In the residential school, however, with its large enrolment, there is a practical certainty that some children always will need a special adjustment program.

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[28] Allen, W. E., "Opportunity and Adjustment Rooms of the Texas School for the Blind," *The Teachers Forum,* IV, November, 1931, pp. 25-27.

It is rather difficult to see much validity in the argument that the residential institution can afford better apparatus than can the day-school class. In the case of highly endowed private institutions this may be true, but the number of these is comparatively small, the majority of residential schools for children without sight being maintained at state expense. If the cost of day-school classes is only 50 per cent of the operating expenses of residential institutions, why cannot the former afford to spend more money on apparatus?

If the state purchases expensive apparatus for its residential institution, why should it not be willing to coöperate with local educational authorities in providing equally good apparatus for day-school classes? The additional advantages of the endowed private institution should not obscure the existing facts in this connection. When these facts are considered carefully, it seems somewhat difficult to find a sound educational or economic reason why the equipment of day-school classes for blind pupils must, necessarily, be inferior to that of the average state-maintained residential institution.

Other Arguments in the Institution Versus Day-School Class Controversy.—A recent defense[29] of the residential institution is based upon the following eight points:

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[29] French, R. S., "The Case for the Residential School," *A. A. I. B. Proceedings,* 1930, pp. 456-458.

1. The residential institution offers a complete regimen, embracing all activities.
2. It offers a special environment to meet individual needs.
3. It has an extensive and varied equipment.
4. It has a selected, highly trained staff for all departments.
5. It offers greater possibilities for grouping pupils according to ability.
6. It provides superior facilities for scientific research.
7. It maintains state-wide contacts, facilitating vocational guidance, placement, and follow-up.
8. In the residential school there is "an intensity of relationships" which makes for lifelong friendships.

The chief difficulty with these arguments is that they apply in general to what the ideal residential school for blind children ought to be rather than to what many of such schools really are. Does the complete regimen of the residential school represent a satisfactory substitute for normal home environment? It already has been pointed out that there is considerable reason to believe that it does not and, furthermore, that it can not.

As has been stated previously, there often is a need for a specially adapted environment for a newly blinded child. It may be somewhat extreme, however, to claim that *all* blind children need a selected environment in order to facilitate their educational and social adjustment.

The question of superior equipment in residential schools already has been thoroughly discussed and requires no further comment.

It is beyond the scope of the present chapter to deal in detail with the qualifications of teachers in either residential schools or day-school classes. It may be doubted, however, if the teaching staff of an average residential school for the blind meets the high standards described in the preceding arguments.

Residential institutions may be better able to classify their pupils according to mental levels than are the day schools, because the enrolment of the former is so much larger. Here again, however, the question may be asked how many residential institutions actually do take advantage of this opportunity for ability grouping?[30]

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[30] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 28.

It undoubtedly is true that the residential institutions offer much better facilities for scientific research on the problems involved in the education and social adjustment of blind children than do day-school classes. The large enrolment and flexible administration of the residential school are favorable to experimental work, whereas the small number of pupils in most day-school classes and the fact that the program is interwoven with that of the regular groups make research difficult. Even in residential schools there often are not enough pupils to participate in an experiment which would warrant valid conclusions without the accumulation of results over a period of years. Other important factors, such as the intelligent coöperation of teachers and principals must be considered in conducting research in addition to the number and availability of pupils.

The last two points in the defense of the residential school require only brief comment. The state-wide contacts of the institution may facilitate guidance, placement, and follow-up. City school systems containing classes for blind pupils, also, can maintain fairly wide contacts and do effective placement and follow-up work in which these pupils may share.[31] It is possible, however, that the state residential school for the blind may have better success in placing its graduates and keeping in touch with them than would a public-school system wherein so few blind children are enrolled. It seems questionable if firm friendships between blind people are more advantageous than similar friendships between the blind and seeing, which the day-school class is supposed to promote. This point rests upon the question as to whether friendships between blind persons or between blind and seeing persons are ultimately better for both blind individuals and society as a whole.[32]

In addition to the foregoing arguments against day-school classes it has been asserted that they neglect manual training and music, both of which are generally considered indispensable in the education of blind children. It is pointed out that, since the residential school controls the entire time of its

[31] Irwin, R. B., Op. cit., p. 27.

[32] Horn, J. L., Op. cit., p. 285.

pupils, these subjects can receive their full share of attention without neglecting fundamental academic subjects. Day schools have met this argument to some extent by including manual training as an extra-curricular subject carried on outside of regular school hours, and also by introducing piano classes.[33] Perhaps there has been a tendency in the residential schools to attach too much importance to the educational value of manual training and music. Unless it is assumed that there is a large transfer from these subjects to other branches of the curriculum or to common life situations, it is difficult to account for the emphasis which has been placed upon them. Progressive educators of seeing children have abandoned the theory of faculty psychology which claimed that any subject could train the "mental faculties," and have found the amount of transfer between subjects to be very limited. Is there any reason to suppose that these worn-out theories apply more aptly to blind children than to seeing children?

A compromise has been suggested similar to the arrangement between day schools and residential institutions in London.[34] This arrangement sends pupils to day-school classes until adolescence when they are transferred to residential schools for industrial and vocational training. In this way, the day school and the residential institution supplement each other. It also has been advocated that blind children receive kindergarten and elementary training in residential institutions, so that they may become skilled in the use of special tangible apparatus. They should then be transferred to ordinary public schools for their high-school training.[35, 36]

Kerr[37] has suggested that day-school classes be maintained for mentally normal blind children, while the residential institutions should be devoted to the care and training of the blind feeble-minded. This proposal, while representing a step in the right direction toward the solution of the problem of blind mental defectives, assumes that only blind feeble-minded children should be trained in a residential school, which is far from being the case. Horn,[38] also, includes dull, feeble, and chronically incorrigible blind children in his list of those who might find the residential institution more advantageous than the day-school class.

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[33] Irwin, R. B., Op. cit., p. 25.

[34] Consult "The Organization of Education in London," *The London Education Service, Eighth Edition,* March 30, 1929 (Reprinted May, 1929), Odhams Press Ltd., London, Ch. 5.

[35] Bledsoe, John F., "How Can the Education of the Blind in Our Special Schools and in the Public Schools be Co-ordinated for the Greatest Advantage of the Pupils?" *A. A. W. B. Proceedings,* 1911, pp. 94-95.

[36] Allen, E. E., "Some Present-Day Aims and Methods in the Education of the Blind," *Outlook for the Blind,* IX, Autumn, 1915, p. 48.

[37] Kerr, James, Op. cit., p. 542.

Summary.—Since the beginning of the twentieth century there has been considerable discussion among educators of blind children concerning the relative advantages and disadvantages of day-school classes as compared with residential institutions. The chief arguments in favor of day-school classes are: (1) that they provide a far better opportunity for the normal socialization of children without sight than do residential institutions; (2) that they form a part of the regular public-school system with recognized standards; and (3) that their maintenance cost is only about half that of residential institutions. In considering these principal arguments it has been pointed out: (1) that blind pupils do not necessarily become socialized in day-school classes unless teachers and administrators take definite steps to promote the intermingling of blind and seeing pupils; (2) that residential institutions can approximate recognized public-school standards if they are under the supervision of state departments of education; and (3) that mere cost is not always a safe criterion for judging the value of any particular educational system. A significant disadvantage of day-school classes is that their daily program is too short to accommodate all the extra needs of blind children. This objection has been met in part, however, by increasing the length of the school day and by opening Saturday classes.

The main arguments presented in defense of residential institutions are: (1) that some kind of centralized institution is an administrative necessity since cases of blindness are so few and scattered; and (2) that residential schools are better able to deal with cases of adventitious blindness which require a period of adjustment before actual instruction is begun. In seeking to defend residential institutions, care must be taken not to base arguments in its favor upon ideal conditions, but rather upon those which actually exist. There is reason to believe that residential schools offer better facilities for scientific research than do day-school classes chiefly because of their larger enrolment and more flexible administration.

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[38] Horn, J. L., Op. cit., p. 278.

An outstanding disadvantage of the residential institution is its lack of normal social life. The consensus of opinion on this point seems to be that the social program should be enriched by means of extra-curricular activities and the cultivation of outside contacts.[39] Dividing the residential institution into a number of self-contained cottage units and endeavoring to introduce a family spirit into each is undoubtedly preferable socially to the older congregate plan of housing.[40] Nevertheless, it must not be thought that the cottage-family system will, of itself, result in a normal social atmosphere. Careful investigations of the effect of institutional environment upon blind pupils are necessary to determine what particular phases are most abnormal.

Two plans have been suggested whereby the day-school class and the residential institution may coöperate. The first of these is to have blind children attend day schools until adolescence and then enter residential institutions for industrial and other vocational training.[41] The other plan is to have blind children attend residential institutions until the completion of the grammar grades and then go to public schools for further education. The latter of these two plans is the one generally followed in this country at the present time in those localities where coöperation between institutions and public schools has been attempted. The suggestion, also, has been made that residential institutions be reserved for the care and training of the blind feeble-minded but, in view of the facts presented, this seems a rather extreme proposal.

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[39] Palmer, F. E., "Social Life of the Blind," *Mss., P. I. I. B.,* Overbrook, Pa., January 14, 1929. 21 pages.

[40] Allen, E. E., Op. cit., p. 49.

[41] Irwin, R. B., "Place of the Day School in the Work of the Blind," *A. A. I. B. Proceedings,* 1910, pp. 40-42.

In conclusion, it may be said that while properly administered and supervised day-school classes for blind children may possess superior advantages over residential institutions, the latter probably will be a necessity for many years in a country as large as the United States. The present tendency is for the supporters of each system to recognize the desirable points in the plans of their respective opponents and to endeavor to supplement each other's shortcomings as far as may be possible.

CHAPTER VI

THE EDUCATION OF PARTIALLY SEEING CHILDREN IN SIGHT-SAVING CLASSES

SINCE the origin of sight-saving classes in the United States has been outlined previously, it will not be repeated here. The present chapter is devoted to a discussion of (1) the organization, administration, and supervision of sight-saving classes; (2) the special equipment and methods of teaching required; (3) criteria for judging the effectiveness of sight-saving classes; and (4) the need of sight-saving classes in residential schools for the blind.

Organization, Administration, and Supervision.—The first step in organizing sight-saving classes in a public-school system is to determine the number of children eligible for them. This may be estimated roughly by means of a tentative ratio established in many states of one sight-saving class pupil to five hundred of the general school population.[1] Thus, in a city the school population of which numbers ten thousand, it might reasonably be concluded that about twenty children should be in sight-saving classes. Since this ratio varies considerably in different parts of the country, and in different types of communities, it does not constitute a very satisfactory basis for determining the incidence of visual defects in school children. A somewhat more satisfactory method is to examine school health records, when these are available, and thus discover pupils who are suffering from such ocular troubles as will make them candidates for sight-saving classes. Probably the best method, however, is a special ophthalmological survey of the city school population conducted by one or more competent ophthalmologists in coöperation with the school health authorities.[2] This procedure eliminates guesswork and frequently finds children whose eye defects have been unnoticed in the routine physical examinations.

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[1] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 115.

[2] Hadley, Hazel; and Hathaway, Winifred, *Sight-Saving Classes,* p. 10.

After the number of children to be included in the sight-saving program has been determined definitely, the next point to be considered is the number of classes to be organized. The decision on this question is influenced by several factors: (1) the total number of sight-saving class pupils to be accommodated; (2) the distribution of these pupils among different grades; (3) the types of eye defects from which the children are suffering; and (4) the funds available.

The first and second of these factors may be discussed together. In general practice it has been found that ten to sixteen pupils may be included in a sight-saving class provided that they do not represent more than four grades.[3] The greater the number of grades represented the smaller the class should be, as it is obvious that one teacher cannot do justice to a large number of children enrolled in four or five different grades.

The particular ocular troubles from which sight-saving class pupils are suffering may have much influence in determining the size of classes. For example, it has been suggested that children with progressive eye troubles, such as myopia, should be separated from other sight-saving class children whose eye conditions are static, because the former require different treatment, and demand more of the teacher's attention.[4]

The funds available for sight-saving work are not infrequently too small to permit the establishment of as many classes as may be desirable. Nevertheless, this fact should not discourage school authorities from using the money at their disposal to the best possible advantage. A sight-saving class which is too large and represents too many grades may be better than none at all, and, when the program is established firmly, additional financial support usually is forthcoming.

The number and size of sight-saving classes to be organized in a public-school system will largely determine their location. If only one class is to be opened, a building as centrally located as possible should be selected, provided that it can offer the necessary facilities. It should be reached conveniently by car lines, bus lines, and other means of transportation, so that pupils will be obliged to spend as little time as possible in going to and from school. In some instances guides for these pupils may have to be secured, since their visual handicaps may make it unsafe for them to pass unassisted through heavy city traffic. In many cases brothers or sisters with normal vision can serve as guides, and when this is impossible, other children in the neighborhood usually are glad to act in this capacity receiving a small fee for their services. If several classes are organized they should be so located as to be most accessible to the children assigned to them.

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[3] *Ibid.*, p. 22.

[4] Coffin, Helen J., "The Value of Separating the Myopic Cases from the Low Vision Cases in Sight-Saving Classes," *Outlook for the Blind,* XVIII, June, 1924, p. 49.

There are two plans upon which sight-saving classes may be conducted. These are: (1) the segregative plan and (2) the coördinative plan.[5] Under the first, sight-saving classes are maintained as separate units, independent of other classes, the pupils doing all studying and reciting in the special sight-saving classroom. The coördinative arrangement provides for the attendance of sight-saving class pupils in ordinary classes for those subjects which do not require the use of vision. They return to their own room for reading, writing, and arithmetic, wherein special equipment is available, and where they receive individual help from their special teacher.

Although the segregative plan may be advantageous in certain instances, as in the case of communicable eye diseases, the consensus of opinion and experience seems to be in favor of the coördinative plan, and it is in general use in school systems where sight-saving classes are organized.[6] Its superior features are: (1) that it permits visually handicapped children to mingle freely with physically normal companions, thus providing a valuable means of socialization; (2) it allows the sight-saving class teacher more time to devote to the individual needs of pupils, and enables her to deal more effi-

[5] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 19-20.

[6] Of 344 sight-saving classes 83.8 per cent use the coördinative plan; 5.2 per cent a partly coördinative system, and 11 per cent segregate the children. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 149.

ciently with a wider range of grading. The first of these features is, perhaps, the more important since normal social development is so marked an asset to physically handicapped individuals.[7] Furthermore, it prevents sight-saving class pupils from being classed as "special pupils," such as those in classes for mentally deficient children.[8] Obviously, the load of the sight-saving class teacher is lightened considerably under the coördinative plan. She can devote most of her time to individual assistance in study and preparation since recitations are made with the regular classes.

The success of the coördinative system, however, depends entirely upon the willingness of principals, supervisors, teachers of regular classes, and sight-saving class teachers to give their whole-hearted support to the project. If some systematic plan is not adhered to strictly, a hopeless muddle and consequent misunderstanding and ill feeling are likely to result. The sight-saving class teacher must not expect the regular grade teacher to perform duties outside her field, nor must the grade teacher be unwilling to recognize the fact that sight-saving class pupils reciting in her grade are entitled to the same considerations as her other pupils. The practice of sending explanatory bulletins to grade teachers who have sight-saving pupils reciting in their classes has been tried with success in some cities and might prove equally effective elsewhere.[9] Above all, it is important for the sight-saving class teacher to know exactly where each of her pupils should be at any hour of the school day and to see that schedules which have been agreed upon are followed strictly. Lawes suggests a chart upon which different grades are represented by various colors as a helpful means of aiding the sight-saving class teacher to follow her schedule without errors.[10]

The supervision of sight-saving classes is of two kinds, ocular and academic.[11] Ocular supervision includes frequent examinations of pupils by the school ophthalmologist and the

[7] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 19-20.

[8] Irwin, R. B., "Sight-Saving Classes in the Public Schools," *Harvard Bulletin in Education,* VII, p. 16.

[9] Hadley, Hazel, and Hathaway, Winifred, Op. cit., p. 20.

[10] Lawes, Estella, *Methods of Teaching Sight-Saving Classes,* p. 18.

[11] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 10-11.

treatment of eye conditions which appear improvable. It is especially desirable that pupils with progressive ocular defects be examined at regular intervals in order to judge the effectiveness of the sight-saving program in reducing the rate of vision loss. Despite the importance of efficient ophthalmological supervision, however, only about 50 per cent of sight-saving classes have regular arrangements for this service.[12]

The academic supervision of sight-saving classes usually is under either state or local auspices. Some city school systems employ a special supervisor for sight-saving classes and day-school classes for blind children. In others the supervision of sight-saving work is included in the duties of the supervisor of all special classes. In some states (e.g., Ohio), where a comprehensive sight-saving program has been developed, there are several state supervisors of such classes. The territory to be covered is so divided among them that every sight-saving class in the State (except those where full-time local supervision is provided) is visited at least five times during the school year.

The supervisor of academic work in sight-saving classes need not be an ophthalmological expert, but it is most important that he or she have a thorough knowledge of the ocular defects found most commonly among school children. Furthermore, the supervisor should be able to explain clearly the symptoms of common eye troubles to principals and teachers so that they may be able to recognize children who should be members of a sight-saving class. The duties and functions of the supervisor are the promotion in every way possible of a better understanding of sight-saving work among teachers, principals, and other school officers; the assistance of sight-saving class teachers with their individual problems; and the location of children belonging in such classes, but who are not already enrolled. Obviously, the sight-saving class supervisor must possess all the qualities necessary to a good supervisor in any field, in addition to the special knowledge of visual defects and sight-saving work referred to previously. It is advocated by leaders in sight-saving work that, whenever possible, these special classes should have full-time supervision separate from other types of classes for exceptional children. This is urged because sight-saving classes differ so widely from other special groups and because proper supervision is the most effective means of promoting the necessary coöperation between sight-saving teachers and other members of the school staff.

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[12] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* pp. 136, 220.

Special Equipment and Teaching Methods. — Proper equipment is a most essential feature of successful sight-saving class work.[13] The selection of a room, is, in itself, most important since no amount of supplementary equipment can remedy a faulty choice in this respect. The room should be large and well ventilated and, if possible, have unilateral lighting either to the east or west, with the glass area of the windows equal to one fourth of the floor area. If bilateral lighting must be accepted, a combination of northern and eastern exposures is fairly satisfactory. A southern exposure should, if possible, be avoided because the constantly changing light requires too frequent an adjustment of window shades and makes it difficult to prevent glare. Windows should be at least three feet above the floor and, since the best light comes from above, they should reach to within six inches of the ceiling. It is important, also, to see that adjacent buildings do not shut out light to any considerable extent. Windows should be equipped with translucent, buff-colored adjustable shades which can cover either the upper or lower half of the window. If two shades are used, mounted in the middle of the window frame, it is important that no space between the rollers should be permitted through which a shaft of light might fall. Artificial lighting is of equal importance with natural lighting and must be installed with a view to giving adequate, well-distributed illumination without glare. In general, fairly high-powered, totally enclosed globes have proved suitable.

The walls and ceiling of the room should be of dull finish, in either light buff or gray, the former color being preferable in temperate latitudes. All woodwork and blackboards should be of dull finish to prevent glare.

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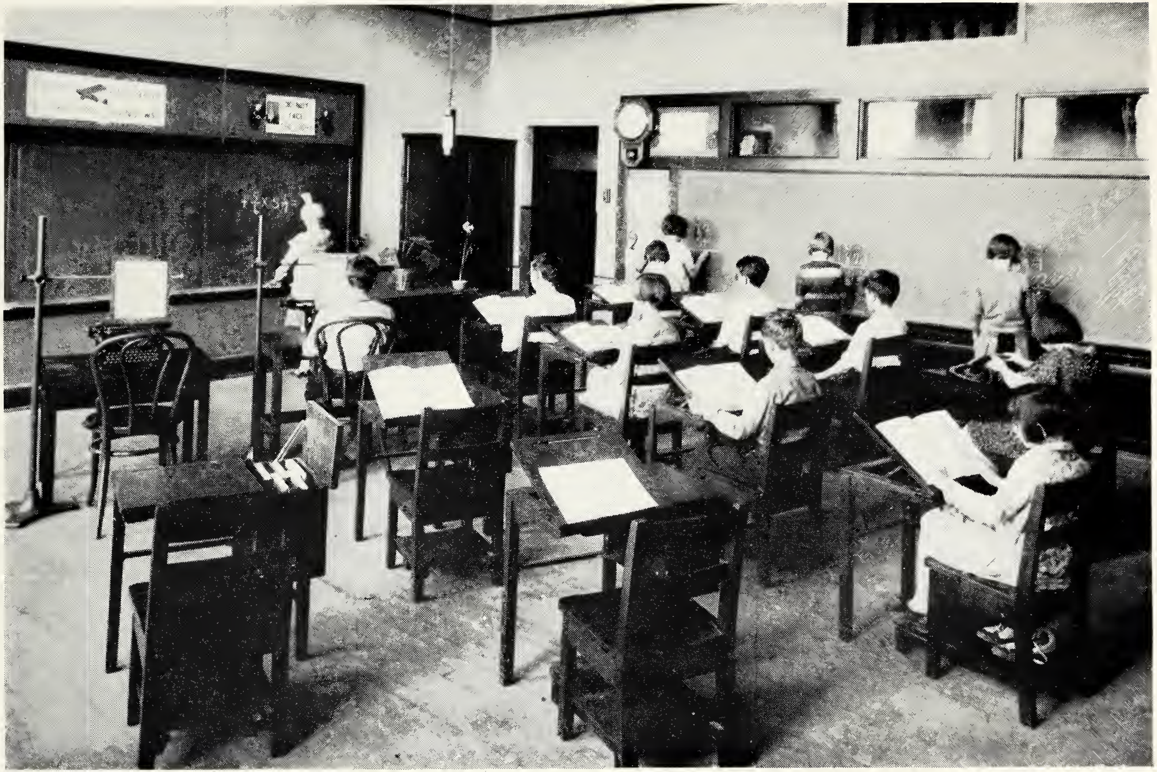
[13] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 26-32.



A TYPICAL SIGHT-SAVING CLASSROOM

The room should be equipped with movable seats and desks which can be adjusted to any desired angle. Large-type textbooks, unglazed manila paper, and soft, black pencils should be used to facilitate reading and writing. Written work may be done either with these pencils and paper, or on the blackboard. Large, clearly outlined maps without detail should be provided, as well as globes and dissected maps to aid in the study of geography. Typewriters with large clear type should be available so that much of the necessary written work may be done without fatigue. Sand-tables, modeling clay, and other similar equipment generally is supplied in order to satisfy the pupil's desire for creative effort.

If there are no other school arrangements for hot lunches, the necessary equipment and utensils should form a part of the furnishings of the sight-saving classroom.[14] A small electric stove, a sink with running water, dishes and cutlery, and a small table and chairs should be supplied so that the lunches can be served in the regular manner. Pupils may be of great assistance in preparing and serving lunches and thus acquire useful knowledge, but as much of the lunch hour as possible should be spent out of doors.

The special methods employed by the sight-saving class teacher apply chiefly to school subjects which require close use of the eyes, e.g., arithmetic, reading, writing, spelling, and geography.[15] The primary aim of all such methods is, of course, to conserve the sight of pupils and, as far as possible, to maintain a level of achievement equal to that of the children in the regular grade.

In arithmetic the oral method should be adhered to as far as is practicable, since it not only relieves eye strain but also encourages habits of mental computation which will conserve vision in later life. Whatever written work is necessary should be given to the children in large, legible figures either on the blackboard or upon unglazed cards or sheets of paper. Children may work the problems either on an adjacent blackboard or upon the special sight-saving class paper, using heavy soft pencils.

[14] *Ibid.,* p. 29.

[15] Lawes, Estella, Op. cit., pp. 24-33.

Reading should be reduced to a minimum in a sight-saving class. It is important for the teacher to bear in mind that her pupils will not have ready access to Clear Type books when they leave school and if they have formed reading habits they may make use of books, newspapers, and magazines at the expense of their vision. Although this restriction of reading habits undoubtedly deprives children of an outstanding educational, social, and recreational advantage, the conservation of their sight is of greater importance and an attempt must be made to substitute other activities for reading. Such reading as must be done in a sight-saving class should be directly correlated with other school work, e.g., a lesson in history or geography. Handwriting should not occupy much of the sight-saving class program, the aim being legibility only. Manuscript writing[16] has proved very satisfactory for sight-saving class pupils because of its simplicity and legibility. For all extensive written work typewriting by the touch method should be employed, since it requires no visual effort.

Geography is, perhaps, one of the most difficult subjects to teach in a sight-saving class because of the necessity of adapting practically all maps and globes. Maps with heavy outlines and few details must be used. For this reason several maps may be necessary in order to teach sight-saving class pupils all the geographical facts which children in the regular grades are expected to obtain from one. Lawes regards the preparation of maps as one of the most difficult tasks of the sight-saving class teacher, and gives specific directions and suggestions for carrying out this work.[17]

The amount of handwork in sight-saving classes should be limited and always well motivated. There has been a tendency to believe that the manual occupations generally followed in classes for blind children are suitable for partially seeing pupils. This, however, is not the case, for such work as sewing and weaving which the blind child can learn may result in serious eye strain for the sight-saving class pupil.[18]

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[16] Grill, Erma G., "Manuscript Writing and Its Value to a Sight-Saving Child," *Journal of Educational Method,* XIX, April, 1930, pp. 407-412.

[17] Lawes, Estella, Op. cit., pp. 39-42.

[18] *Ibid.,* p. 46.

FIGURE 5

SPECIMEN OF TYPE USED IN SIGHT-SAVING CLASSES

"Mother, Joe won't let me play with the ball team when they are practising. Why can't I, Mother?"

When the coördinative plan is followed, most of the remaining common school subjects can be taken in the regular grades with the assistance of the sight-saving class teacher in the preparation of lessons and other assignments. In such cases, however, the sight-saving teacher must remember that she is only supplementing the vision of her pupils and not performing the functions of a coach teacher. If some of her pupils are taking history with the fifth grade, for example, and the textbook in use is not available in Clear Type, she may read the assignment to them,[19] but by no means attempt to *teach* it. Sight-saving classes have been in existence too short a time to permit the formulation of methods which can be accepted as final and conclusive. Experience has shown certain procedures to be generally satisfactory, but if these could be supplemented with the results of controlled experiments concerned with teaching techniques, the efficiency of sight-saving classes would be increased considerably.[20]

Judging the Effectiveness of Sight-Saving Class Work.—The question as to the effectiveness of sight-saving class work is one of considerable importance, since these classes must be able to justify their existence upon educational and social grounds if they are to form a permanent branch of the public-school systems of this country. Irwin proposes two criteria for judging the effectiveness of sight-saving classes: (1) to what extent has vision actually been conserved and, (2) have the sight-saving class pupils maintained a normal level of school achievement?[21]

The first of these two criteria is perhaps the more important in as much as the majority of sight-saving class promoters hold conservation of vision as their principal aim. Three phases of sight conservation may be distinguished in this connection: (1) the improvement of vision under sight-saving class conditions to an extent where pupils may be returned to the regular grades; (2) the prevention of further loss of vision; and (3) the continuance of sight-saving class habits in pupils after leaving school.

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[19] *Ibid.*, p. 35.

[20] The National Society for the Prevention of Blindness in collaboration with Teachers College, Columbia University, is undertaking a research program to determine the effect of school activities upon vision. Professor M. B. Hillegas will supervise the work which will be directed by Miss Roma Gans. Consult: *Outlook for the Blind,* XXV, September, 1931, p. 114.

[21] Irwin, R. B., Op. cit., pp. 22-24.

Little agreement appears to exist among sight-saving class authorities as to the relative importance of the three points outlined above. While some feel that the returning of pupils to the regular grades, even if it affects only a small percentage of the total enrolment, is an important aspect of the sight-saving program, others believe that too great emphasis has been laid upon this particular phase, and that, consequently, other more important aspects have been neglected.[22] Since only 4.5 per cent of sight-saving pupils actually are returned to regular grades,[23] the argument that this point is of minor significance would seem to have some justification. It must not be forgotten, however, that the detection and cure of visual defects, which eventually might result in serious impairment of vision, or total blindness, is a most important service even if it affects only a very small minority of sight-saving class pupils.

Some leaders regard the prevention of further loss of vision as an outstanding function of the sight-saving class.[24] Certain progressive eye troubles, for example, myopia, frequently can be arrested under optimum conditions such as those of a properly equipped sight-saving classroom, whereas, under ordinary school surroundings, the defect would steadily become more serious. One superior advantage of this criterion for judging the effectiveness of a sight-saving program is that ocular conditions can be measured, and an objective estimate of the degree of visual change secured. If it can be shown that static ocular conditions were maintained during the pupil's attendance upon a sight-saving class, or that any change which did take place was in the nature of an improvement, it would be difficult to deny that sight-saving classes have performed an important preventive function.

Whether or not sight-saving class pupils after leaving school continue to practise the habits of ocular hygiene taught them is probably the most significant test. If, for example, they refrain from reading small print, do not work too long a time at tasks requiring concentrated vision, and are content with a vocation which does not necessitate eye strain, then the sight-saving class has accomplished a permanent contribution to the conservation of vision. If, however, pupils disregard all the rules of ocular hygiene as soon as their school attendance is over, it is difficult to understand how any lasting service has been rendered by the sight-saving class. There is need for a wide, and thorough follow-up study of sight-saving class pupils to determine objectively how many of them really have benefited from the special school training which was provided for them.[25] It naturally would be expected that a certain proportion would ignore what they had learned in sight-saving classes, but just how large this proportion is among all sight-saving class graduates is not definitely known.

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[22] Meyer, George F., "Public School Classes for Children With Impaired Vision," *A. A. W. B. Proceedings,* 1925, pp. 52-54.

[23] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 176.

[24] Irwin, R. B., Op. cit., p. 16.

Irwin's second criterion—the extent to which pupils in sight-saving classes maintain a level of school achievement equal to that of ordinary children—will be discussed fully in Chapter IX. Suffice it to say here that available evidence seems to show that, in general, sight-saving classes enable pupils with defective vision to maintain a higher level of achievement than would be possible if they attempted to compete in the regular grades under ordinary school conditions.[26] There is evidence, however, to show that some pupils who enter sight-saving classes do not keep pace with the regular grades, but become one or more years retarded, while on the other hand, some pupils who enter such classes already retarded are able to make up this retardation during their attendance in a sight-saving class.[27]

[25] Two hundred classes have attempted some follow-up, four are planning such work, while 130 have made no follow-up studies. No data are available, however, regarding the thoroughness of the follow-up work undertaken. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 208.

[26] Myers, Edward T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* p. 78.

[27] *Ibid.,* p. 74

Another point to be considered in judging the effectiveness of sight-saving classes is the extent to which their equipment and procedure approximate accepted standards of efficiency. For example, are the lighting conditions of the majority of these classes what they should be? Is the furniture entirely suitable? Do the pupils have all the available Clear Type books and other special sight-saving apparatus which they need? Are the teachers well trained, competent, and interested in their work? Is there regular and reliable supervision of the pupils' ocular conditions? Is there helpful academic supervision and coöperation with other teachers and school officers?

The foregoing represent a few of the more important points to be considered in estimating the operating efficiency of any sight-saving class. It must be borne in mind, of course, that in some instances the failure to attain desirable standards is due to lack of funds rather than to carelessness on the part of those responsible for the sight-saving program. An increasing number of states, however, are providing special subsidies for this work[28] and this policy should eventually relieve the financial difficulties under which many sight-saving classes have labored. There is reason to believe, however, that even with adequate financial support, all sight-saving classes will require frequent and careful inspection.

To aid sight-saving class teachers and supervisors in judging the effectiveness of their work a rating scale has been prepared recently,[29] consisting of two principal parts: (1) eye care and training, and (2) environment. Under the first section are included details concerning ophthalmological examinations, and the responsibility of the teacher, child, and parent for eye conditions and health education. The second part deals with conditions of natural and artificial lighting, the quality of furniture and equipment, and the use of eyes in school work. Arbitrary values, totalling two hundred points, have been assigned to each item in the schedule, ac-

[28] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 25-26.

[29] Aherne, Vina M., "Is a Rating Schedule Advisable for Sight-Saving Classes?" *The Sight-Saving Class Exchange,* 35, February, 1931, pp. 31-34. An abridged form of this schedule appears in *Special Education: The Handicapped and the Gifted,* p. 228.

cording to their importance. A scale of this kind should enable the teacher or supervisor to discover which phases of the program are in need of special attention. The author of this rating scale believes that sight-saving class teachers do not always recognize the fact that certain branches of their work are not operating efficiently, and that if these inefficiencies were called to her attention by means of a check-list, she might, in many instances, remedy the shortcomings herself without recourse to outside agencies.

Sight-Saving Classes in Residential Schools for the Blind.—The establishment of sight-saving classes in large cities is a comparatively simple administrative task, but the problem presented by partially seeing children in small towns and rural communities is admittedly difficult. Oak Harbor, Ohio, is a sight-saving center which serves pupils from adjacent communities, special transportation being provided.[30] It has been suggested also that partially seeing children in rural communities be sent to the nearest large city where sight-saving classes already are established. Special boarding arrangements would be provided, the expense being shared by state and local educational authorities and the child's parents. While the first of these plans may be satisfactory if the sight-saving center is not expected to serve too great an area, both of them suffer from defects similar to those pointed out in Chapter V in connection with day-school classes for blind children, viz., that daily transportation may overtax the strength of the pupils and that unless boarding arrangements are under competent supervision they may exert an undesirable influence upon pupils.

It has been suggested, also, that partially seeing children in isolated rural communities who must attend ordinary schools be supplied with Clear Type textbooks and other apparatus to relieve eye strain.[31] If lighting conditions were fairly good and the teacher was superior, this plan might work quite well. It is, however, not quite fair to the regular pupils in the class, since the partially seeing child probably would require more attention from the teacher than would pupils with normal vision. The method is, of course, to be preferred to that of allowing a child with serious visual defects to struggle along in the regular classes as best he can without special apparatus and intelligent understanding on the part of the teacher.

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[30] Hadley, Hazel, and Hathaway, Winifred, Op. cit., pp. 14-16.

[31] *Ibid.*, p. 15.

In twelve states,[32] however, partially seeing children in rural communities are expected to enrol in the residential school for the blind and in states where no city sight-saving classes have been established, there is no other place for either city or country child to attend. The presence of large groups of partially seeing children in many residential schools for the blind often creates a difficult situation. Some directors of institutions feel that their methods and curricula should be adapted primarily for the blind and that any children who are admitted must be regarded as blind children whether or not they have sufficient vision to read Clear Type. This seems to be a rather unfortunate point of view, since partially seeing children do not, as a rule, find the slow tangible apparatus very attractive and frequently use their eyes at the expense of much greater strain than would be necessary even in an ordinary school. They seldom make good finger readers, and teachers are obliged to watch them constantly to prevent them from reading the embossed characters with their eyes. Frequently it is necessary to resort to pasteboard "blinders" or a shield over the book which is often a source of annoyance to both teacher and pupil. Furthermore, partially seeing children in a residential school for the blind are not likely to acquire habits of ocular hygiene and vision conservation. If they are obliged to use tangible methods during their school life it is probable that as soon as they leave the institution they may resort to visual methods which may have serious consequences.

Certain more far-seeing educators of the blind[33] have realized that, if residential institutions are to continue admitting large numbers of partially seeing children, (who otherwise would receive no education), they should make special provision for them to be taught according to recognized sight-saving class procedure. Three residential schools are reported as having sight-saving classes, while eighteen others make use of Clear Type material.[34, 35] In this way, partially seeing children cease to be a problem either in regular rural schools, city schools where no sight-saving classes are established, or schools for the blind. They are taught, not as blind children, but as seeing children, and are instructed also how best to conserve the sight which they still possess.

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[32] "The Partially Seeing," *Special Education: The Handicapped and the Gifted*, pp. 166, 168.

[33] Van Cleve, Edward M., "What Degree of Defective Vision Renders a Child Eligible to Attend a School for the Blind? How Should We Teach the Partially Sighted?" *A. A. I. B. Proceedings*, 1916, p. 94.

There seems little doubt that, under existing conditions, the establishment of well-equipped sight-saving classes in residential schools for the blind which enrol a large number of partially seeing pupils is the nearest approach to a solution of the problem. It must be borne in mind that these children have an undeniable right to an education according to their special needs. If the public schools cannot make adequate provision for them, the residential institution is obliged to receive them, but it has no right to force upon them methods which are totally unsuited to their requirements. The unwillingness of some residential schools for the blind to depart from traditional procedure is partially responsible for their reluctance to organize sight-saving classes. It is alleged, also, that the establishment of sight-saving classes in residential schools for the blind may prevent public-school systems from fulfilling their duty in organizing this work. More progressive workers in the field of the education of visually handicapped children are beginning to realize the necessity of making special provisions for partially seeing pupils in schools for the blind, and it seems probable that this hitherto neglected class of children will receive more attention in the near future.

Summary.—While rough estimates of the number of children in the school population of a city or town may be made by following the ratio of one partially seeing child to five hundred with normal vision, the most reliable method is to

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[34] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 27.

[35] The Iowa School for the Blind organized a sight-saving class in September, 1931. Consult: *Outlook for the Blind,* XXV, September, 1931, p. 112.

conduct a special ophthalmological survey. Two plans of administration may be followed in establishing sight-saving classes: (1) the coördinative plan whereby the sight-saving class pupils do as much of their work as possible in the regular grades, and (2) the segregative plan whereby sight-saving pupils do all their work in the special classroom. The former plan is generally adhered to in this country at the present time, although the latter may be of value in cases of communicable eye diseases. Competent supervision, both ophthalmological and academic, is essential to the success of a sight-saving program.

The location and equipment of the sight-saving classroom are of great importance. Unilateral lighting from either east or west is recommended, a southern exposure being avoided whenever possible. Artificial lighting of adequate candle power without glare is an additional item of importance. Adjustable window shades should be provided and walls, ceilings, and all furniture should be so finished as to produce a minimum of glare.

If the coördinative plan is followed, sight-saving class pupils can take many of the ordinary school subjects in the regular grades. Subjects such as reading, arithmetic, and geography require special methods. It is recommended by sight-saving class authorities that reading by visually handicapped pupils be reduced to a minimum and that other habits, not involving eye strain, be substituted. Reading should be correlated with other studies, such as history and geography. The aim in arithmetic should be to emphasize oral methods as much as is practicable. Geography presents one of the most difficult problems for the sight-saving class teacher because of the necessity for adapting maps which shall be clear and not contain too much detail. The amount of handwork should be limited and *always well motivated.*

Various criteria for judging the effectiveness of sight-saving classes have been suggested, among them being: (1) the extent to which ocular defects are cured and children returned to the regular grades; (2) the extent to which the children's vision has been prevented from decreasing; (3) the extent to which sight-saving class pupils have maintained a level of achievement similar to that of children in the regular grades; and (4) the extent to which the ocular hygiene taught to sight-saving class pupils functions after they leave school. The first of these criteria is not very satisfactory since it affects only 4.5 per cent of sight-saving class pupils. The second criterion is fairly satisfactory since the acknowledged purpose of these classes is the conservation of vision, and objective measurements can be obtained. The third basis for judging the effectiveness of sight-saving work is not discussed at length in this chapter, but there is evidence to show that some pupils are retarded while others are accelerated. The fourth criterion is of considerable importance but it can be used only in cases where careful and thorough follow-up studies are made. In addition to these four criteria a rating scale has been proposed by which the sight-saving class teacher or supervisor may rate the effectiveness of teaching methods and equipment.

Since sight-saving classes have not been established in the city public-school systems of all states, and since classes which exist do not cope effectively with the problem of the partially seeing children in rural areas, these children are obliged to attend residential schools for the blind. These institutions should not force partially seeing children to become finger-readers and use tangible apparatus, since they rarely become expert and revert to visual methods after leaving school, at the expense of dangerous eye strain. Under existing conditions schools for the blind which enrol a large percentage of partially seeing children should institute properly equipped sight-saving classes for them until such time as the public-school systems can handle this problem adequately.

CHAPTER VII

HEALTH PROBLEMS OF VISUALLY HANDICAPPED CHILDREN

General Physical Condition of Blind Children.—It is conceded generally among experienced educators of those without sight that blind children are inferior to the seeing in physical vigor. Among the principal reasons for this are: (1) faulty pre-school training; (2) the fact that lack of vision tends to curtail physical activity; and (3) additional defects or weaknesses resulting from the illness, accident, or congenital condition causing blindness.

As pointed out in Chapter IV, parents of blind children frequently refuse to allow them to participate in normal physical activity through fear that they may be injured.[1] They are not permitted to play with other children or to engage in any form of bodily exercise, but are encouraged to sit idly for long hours at a time. This inactivity naturally prevents normal physical development and results in low vitality and physical stamina. Villey[2] describes several cases of complete physical incapacity among blind children entering school due primarily to the misunderstanding and neglect of parents. While such extreme cases may not be common in this country at the present time, it undoubtedly is true that many pupils entering residential schools are physically weak and undeveloped, and are suffering from defects which might have been prevented through intelligent pre-school care. It is of primary importance, therefore, that parents of young blind children be made to understand the significance of proper physical exercise during the pre-school period. The school can and does accomplish much in the correction of physical weaknesses and defects among blind children, but irreparable damage often can be wrought by incorrect early training.

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[1] Sizeranne, Maurice de la, *The Blind as Seen Through Blind Eyes,* p. 107.

[2] Villey, Pierre, *La Pédagogie des Aveugles,* pp. 20-24.

Since lack of vision undoubtedly restricts spontaneous bodily activity it is natural that blind children should develop sedentary habits unless systematic physical training is provided. At home and in school blind children need constantly to be encouraged to engage in occupations and pastimes involving physical exercise. Unless this is done the majority of these children will spend their leisure time in reading, playing games requiring no bodily exercise, or in "just sitting." Such conditions not only prevent normal physical growth but also frequently result in the development of undesirable habits,[3] tics, and mannerisms. This does not mean that children without sight should be allowed only those pastimes requiring physical exertion, nor that physical training may not be overdone. The fact that blindness curtails bodily activity, however, makes it necessary to supervise the physical development of blind children more closely than that of the seeing.

It happens frequently that illnesses and pathological conditions, e.g., infantile paralysis, meningitis, and brain tumor which cause blindness, also result in general physical weakness or defects such as paralysis, deafness, etc. Accidents resulting in loss of vision, likewise, may produce other defects, such as injury to fingers or limbs. Congenital conditions causing blindness also may result in physical weakness, although this need not necessarily be the case. Where bodily deficiency is due to the after effects of illness it often is possible to improve the condition through systematic physical training. Many semi-paralytic conditions are practically incurable, but the improvement of general health in such instances may make the defect less serious.[4] Congenital diseases, such as syphilis, will, of course, respond to medical treatment and further damage may thus be prevented. General physical inferiority from congenital causes may be improved to some extent through physical training and optimum health conditions.

Since the physical welfare of blind children demands even more attention than that of the seeing, the importance of expert medical service in residential institutions and day-school classes can hardly be overestimated. The majority appear to recognize their obligation in this respect and make provision for the medical examination and supervision of their pupils. Many residential schools publish health statistics in connection with their periodic reports which illustrate the type of their medical service. It is difficult to judge, however, how efficient the health work in schools and classes for the blind really is.[5] A thorough study of the situation might reveal that while many schools theoretically provide medical service, the actual attention which the children receive amounts to very little. In residential institutions, especially, there may be a tendency to accept inferior medical service either because it is cheaper or because the state is not actively interested in the problem.

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[3] Henderson, Miss, "Physical Training for the Blind," *A. A. I. B. Proceedings,* 1910, p. 81.

[4] Cox, A. H., "Physical Education Methods and Objectives" (For Boys), *A. A. I. B. Proceedings,* 1910, p. 540.

In addition to general medical care, pupils in schools and classes for the blind should have the benefit of expert ophthalmological service. In many cases proper treatment enables children to retain a certain amount of vision which otherwise would be lost. Furthermore, even where sight is completely lacking, eye conditions may arise which will endanger the general health of the child unless given proper medical attention. The health program for blind pupils, also, should include adequate dental care and the services of such other specialists as are found necessary from the general medical examination. In short, everything possible should be done to improve the general health of blind children and to raise their physical vigor to a level as nearly equal to that of seeing children as possible. It has been well said that "in the education of the blind, health should come first and all else will follow."[6] Lack of sight is in itself a sufficiently serious handicap and should not be increased by the additional disability of poor health if this can be avoided.

Posture Training and Gymnastics for Blind Children.—

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[5] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 4a.

[6] Boettger, O. H., "Aims of Physical Education," *A. A. I. B. Proceedings,* 1930, p. 541.

The importance of correct posture as a means of promoting good health has long been recognized by the medical profession. The treatment of postural defects should, therefore, constitute an important part of the physical-welfare program for pupils in schools for the blind. Incorrect posture and allied physical defects appear to be prevalent among children without sight,[7] possibly because of their generally inferior physique. Blindness itself frequently is responsible for certain peculiarities of posture, such as the bending forward of the head or walking with the trunk bent backward. Spinal curvatures, flat feet, and other postural abnormalities also occur commonly among blind children. For example, Swinerton[8] found that 180 children examined at Perkins Institution over a period of eight years were suffering from one or more postural defects.

Although good posture is valuable to children without sight chiefly as an aid to health, it is also a social and economic asset. The presence of postural peculiarities may accentuate greatly the social handicap of blindness, making it doubly difficult for the child without sight eventually to take his place in ordinary society. Bad posture with its consequent increased fatigue and nervous tension lowers the efficiency of the blind worker who must compete with the seeing upon even more difficult terms.

Every residential school and day class for blind children, therefore, should make adequate provision for posture training. It should be directed by a competent orthopedic surgeon in collaboration with the general medical officers and teachers of physical education. The latter should be responsible for putting into effect such programs of corrective gymnastics and courses of treatment as may be recommended by the orthopedic specialist.

Calisthenics and other types of formal physical training usually constitute a part of the health program of most schools and classes for the blind. While such exercises undoubtedly are of value in certain instances, their formality makes them undesirable as a sole means of physical education. There is a danger that the aim in such work may become the performance of "stunts" rather than the development of boys and girls, and that interest and spontaneity on the part of pupils may be lost. Progressive teachers of physical education in schools for the blind are attempting to introduce games, dancing, and other methods of physical training which have a greater appeal for blind pupils than formal gymnasium work.[9] In this way not only are the aims of physical education accomplished, but also the social acceptability of blind pupils is increased.

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[7] Stewart, Anne Rothwell, "Corrective Gymnastics," *A. A. I. B. Proceedings,* 1910, pp. 77-78.

[8] Swinerton, L. D., "Posture Training for Blind Children," *The Teachers Forum,* January, 1930, p. 11.

There sometimes is a danger of overdoing physical education and overtaxing the strength of children without sight. Educators of the blind should not let their zeal to increase the physical prowess of their pupils lead them to overdo physical training at the expense of their academic instruction and possibly of their general health. It has been said that the goal of physical education among blind children is not to produce prize fighters, but well-developed individuals with an active interest in outdoor sports[10] and other devices which promote physical development. The aim should be, therefore, to encourage other types of physical education besides formal gymnasium work in which children can take a real and permanent interest, and which will be beneficial without being over strenuous.

The teaching of gymnastics and other forms of physical training to children without sight is very difficult since each child must receive individual instruction.[11] For instance, in giving dancing lessons it often is necessary for the teacher to sit upon the floor and guide the pupil's feet until the step is learned.[12] It is obvious, therefore, that the successful instructor of physical education in a school or class for the blind must possess untiring patience, endurance, ingenuity, and resourcefulness.

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[9] Osborn, Vivian, "The Educational Value of Physical Education for Blind Girls," Part II, *Outlook for the Blind,* December, 1926, p. 48.

[10] Cox, A. H., Op. cit., p. 539.

[11] Sawyer, M. E., "Some of the Problems of the Teacher of Physical Instruction," *A. A. W. B. Proceedings,* 1911, pp. 93-94.

[12] Henderson, Miss, Op. cit., p. 80.

One of the principal criticisms which has been directed against day-school classes for blind children is that no suitable provision exists for physical training.[13] While this may be true in some cities, others have been fairly successful in arranging special gymnasium work for blind pupils outside regular school hours.[14] An attempt, also, has been made to encourage these children, whenever possible, to participate in extra-curricular activities which involve physical training. There seems to be no valid reason why day-school classes cannot meet the need for the physical training of blind pupils if special teachers can be provided, since the regular classroom teacher usually has a heavy program.

Playground Activities for Blind Children.—The majority of residential schools for the blind have fairly large and well-equipped playgrounds which provide an opportunity for outdoor exercises and sports. Much of the equipment in common use among seeing children also is suitable for the blind, e.g., swings, seesaws, sand-piles, etc. A special running track usually is laid out with either "trolley" or "cable" guides. The former consists of a wire stretched above the race track on which a movable trolley runs. One end of this trolley is held in the runner's hand and guides him with little inconvenience. The second method is to stretch a cable beside the track at a height about midway between the runner's shoulders and knees. After walking up and down the course slowly a few times with his hand on the cable, he generally is able to run quite freely touching the cable only occasionally. It is claimed that eventually the blind child becomes so familiar with the course that he makes no use of the guide and thus increases his speed and freedom of movement.[15]

There are many outdoor games which can be played by children without sight, such as those listed by Speakman,[16]

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[13] Burritt, O. H., "A Platform of Principles," *A. A. I. B. Proceedings,* 1924, p. 219.

[14] "The Blind," *Special Education: The Handicapped and the Gifted,* p. 263.

[15] Boettger, O. H., Op. cit., p. 542.

[16] Speakman, Martha T., *Recreation for Blind Children,* pp. 11-12; 35-45.

Skating is a Popular Outdoor Recreation Among Blind Girls

and the play project described by Chrysler.[17] Football, in a modified form, is considered generally to be the best game for boys.[18] The formation in 1908 of the National Athletic Association of Schools for the Blind,[19] which now includes fourteen schools, has been a marked stimulus in encouraging outdoor sports among children without sight. Every year competitive athletics are held in which each school takes part. These events promote not only beneficial physical exercise, but also good sportsmanship and school spirit, qualities which too frequently are lacking among blind pupils.[20]

The chief criticism of existing playground facilities for children in residential schools for the blind is lack of adequate supervision.[21] Unless they are training for some specific athletic event or are active members of a football team, children often are left completely to their own devices on the playground, without leadership or supervision. This is unfortunate because the majority of blind pupils do not know how to play, and are not likely to exert themselves and gain real benefit from playground periods unless definitely encouraged and instructed. Expensive and up-to-date playground equipment is of little value if blind children spend their outdoor time in wandering aimlessly about or sitting on benches. Naturally, it is not desirable to supervise *all* the children's free time, making them feel that there is no period of the day in which they may do as they like. It is important, however, that they be taught to play effectively and that their interest in outdoor activities be stimulated as much as possible.

As mentioned in Chapter V, there seems to be some doubt as to how far blind children attending day-school classes actually join in the playground activities of their seeing companions. Reports upon this point are rather conflicting, some teachers maintaining that blind pupils mingle easily in the play of the seeing, while others claim that this is not the case and that encouragement and careful supervision are required to promote normal play relationships between the blind and those who see. It seems probable that the latter statement is more representative of the real situation, especially among older children. There are, however, many games which blind children may be taught to play with the seeing, and other activities such as hiking, camping, etc., which are extensions of playground work, can be shared with little difficulty by children without sight.

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[17] Chrysler, Josephine Lee, "Pleasantville—Play Village for Blind Children," *Outlook for the Blind,* XX, September, 1926, pp. 45-47.

[18] Gregory, John D., "The Importance of Ample Playgrounds and of Free and Directed Play in the Education of the Blind," *A. A. I. B. Proceedings,* 1910, p. 82.

[19] Clements, Clyde C., "The Activities of and Participation in the National Athletic Association of Schools for the Blind," *A. A. I. B. Proceedings,* 1926, p. 326.

[20] Butler, C. B., "Putting the 'It' in Spirit," *A. A. I. B. Proceedings,* 1928, pp. 368-369.

[21] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 10.

In both residential schools and day-school classes the effectiveness of playground work with blind children depends principally upon the teacher in charge of these activities. He or she should not only have a thorough knowledge of the principles and methods of play, but also should be able to appreciate the possibilities and limitations of blind pupils and thus strive to minimize their handicap. Individuals with additional physical defects, which make it difficult for them to join in certain games, should not be forced to do so and thus made to appear inferior to their companions. Furthermore, in choosing teams for football or other competitive games preference should not be given to children who possess considerable vision. It happens too frequently that the so-called achievements of the blind are, in reality, the accomplishments of individuals with much useful vision. Children with partial sight are in the majority in some schools for the blind, and the temptation is strong to feature them in games and athletic events, and to neglect those totally without vision. This is a decided injustice to the latter, especially in a school which is maintained primarily for *blind* pupils. Another practice which should be avoided by playground supervisors and athletic coaches in schools for the blind is that of starring the more expert children either totally or partially blind and leaving those who are less agile to their own devices. It must be remembered that, if playground activities and athletics in schools for those without sight are to fulfil their major function—the promotion of physical development and good health—they must be made available to all children according to individual needs and capacities. It is the duty of the teacher or supervisor of physical education to see that this is done and that no undemocratic and unfair procedures, such as those just described, are permitted.

Importance of Correct Diet for Blind Children.—Although the importance of proper feeding as a factor in child health and development has been recognized by pediatricians for many years, comparatively little attention appears to have been paid to the problem of diet in residential schools for the blind.[22-24] This is unfortunate, since children without sight generally are deficient in vitality and, therefore, require dietary supervision even more than do the physically normal. "Probably the most serious valid criticism against our American residential schools for the blind in common with institutions for children generally is the wholly inadequate attention given to the new science of dietetics,"[25] and until recently, no attempt to feed blind children according to scientific principles has been reported.

This lack of interest in proper diet prevalent in the majority of residential schools probably is due chiefly to a misunderstanding on the part of governing boards and superintendents as to the nature of correct feeding. There is a tendency to believe that large quantities of apparently substantial food are all that is necessary, and that the services of a dietitian would be only a source of unnecessary expense. Furthermore, anything resembling catering to children's appetites should be avoided, as they should learn to eat what

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[22] The need of well-balanced meals is mentioned in an article, "Health in Our Curriculum," by G. E. Lineberry. Consult *A. A. I. B. Proceedings,* 1924, p. 127.

[23] The President's Biennial Report for 1926-1928 of the Florida State School for the Deaf and the Blind says (p. 18): . . . "Great care has been taken to see that all are furnished with a well balanced and well prepared diet."

[24] An experiment in diet was undertaken recently at the California School for the Blind. Consult: West, Bessie Brooks, *Report of an Experiment in Nutrition at the California School for the Blind.*

[25] Burritt, O. H., Op. cit., p. 216.

is provided thankfully and without complaint. It often is thought that the per capita cost of feeding blind children in a residential school would be greatly increased if scientific feeding were instituted, and since many schools are hampered by inadequate funds, they hesitate to accept any innovations in diet.

While the proper selection, preparation, and serving of food in a residential institution may be difficult, the experiment conducted by West[26] at the California State School for the Blind demonstrates that it can be done at a per capita cost of from 25 to 28 cents per day. The supervision of a competent dietitian and the coöperation of kitchen staff, matrons, and purchasing agent are, of course, essential. One of the chief difficulties which West encountered was the preparation of food in a central kitchen long before it was to be eaten, and its consequent loss of flavor and vitamine value through being kept on steam tables for long periods of time. She points out that a unit system of feeding, whereby food is prepared in relatively small quantities, is the only way in which it can be made to retain its nutritive value and to be appetizing. It is pointed out that the cottage system of housing which now obtains in some schools for the blind is admirably adapted for this purpose. It should not be thought, however, that the existence of the cottage plan necessarily results in proper diet. It is quite as possible to serve inferior food from a small kitchen as from a large one, and although the necessity for cooking in large quantities is eliminated, inefficient cooks may not only destroy the value of the food, but also make it so unpalatable and serve it so unattractively that children will refuse to eat it. Expert dietary supervision is absolutely essential in any institution, whether congregate or segregate, if children are to be fed properly. Undoubtedly, the cottage plan is well suited to the provision of good diet, but it is no guarantee that well-balanced menus will be served.

The tendency to include too much starchy food, such as bread, potatoes, and pastry in the diet of blind children in residential institutions is unfortunate, since their greater physical inactivity prevents them from using the energy contained in these foods, and a condition of acidity results. The lack of vitamines aggravates the low vitality of these children and makes them more subject to illness. West found that the girls in her experiment showed greater resistance to colds and other minor ailments[27] during the time that they were receiving proper diet. Their desire for physical activity was increased, gains in weight were effected, where these were desirable, and general health was markedly improved.

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[26] West, Bessie Brooks, "The Cost and Nutritional Effect of Making An Institutional Diet Palatable," *A. A. I. B. Proceedings*, 1930, pp. 556-561.

Experiments similar to those of West should be carried out in other residential schools for the blind. Her investigation has shown the importance of correct diet in the general health program for blind children and there seems to be no sound reason why her findings should not be used in other institutions, especially those which are not handicapped by centralized kitchens. If those in charge of residential schools could be made to realize that good diet is essential to health; that the employment of a trained dietitian is not a "fad," but is of equal importance with the services of a doctor or nurse; and finally that the cost of good food well prepared probably does not exceed that of a poorly balanced and unattractive diet, much might be accomplished. Until this is done institutions for the blind will continue, as West says, to have undernourished children and full garbage cans.

Health Problems of Sight-Saving Class Pupils.—In his survey of sight-saving classes in this country Myers[28] asked for teachers' judgments concerning the health of their pupils. He emphasized the fact that the data obtained are of a subjective nature, but adds that, since the sight-saving teacher probably has a more thorough knowledge of her pupils than is the case with the ordinary grade teacher, her judgments may be more accurate. According to replies secured for 2803 children the health of sight-saving class pupils appears to be about the same as that of the general school population.[29]

In addition to the question concerning general health

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[27] West, B. B., Op. cit., p. 559.

[28] Myers, Edward T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* p. 44.

[29] *Idem.*

Myers asked whether or not pupils had any other physical defects. This question brought no response from a number of teachers, but of the 1329 replies received, 554, or 41.7 per cent, indicated the presence of other defects,[30] the more common of these being underweight, anaemia, deafness, speech defects, and nervous disorders.

It is interesting to note that the first two defects mentioned, underweight and anaemia, are generally caused by malnutrition through faulty diet. As mentioned in Chapter VI, most sight-saving classes provide hot lunches for the pupils in order that their noon meal may be nourishing and attractive. From Myers's findings, however, it would appear that even more attention should be given to the diet of sight-saving class pupils, including a study of home conditions, so that remediable defects may be eliminated. In some larger cities, such as Cleveland,[31] where a very complete health program for all school children has been established, sight-saving class children are given careful medical attention as well as competent ophthalmological supervision. The importance of this latter service already has been emphasized in Chapter VI. It should be pointed out, however, that notwithstanding its undeniable importance, ophthalmological care for partially seeing children is by no means the only form of health service which they require. Minimizing the handicap of defective vision is a most worthy aim, but if other equally serious physical handicaps are allowed to develop meanwhile, the ultimate value of the service may appear somewhat questionable.

Simple physical training can be taught to most partially seeing children in the same way as it is to those with normal vision. Care must be taken, however, that pupils suffering from progressive myopia are not allowed to participate in exercises requiring great physical exertion, because of the danger of retinal detachment.

Playground activities for sight-saving pupils present some problems similar to those mentioned in connection with activities for blind children attending day-school classes. Of course, partially seeing children are, in most instances, better able to join in games with the physically normal than are the totally blind. There is reason to believe, however, that sight-saving class children do not always mingle easily with normally seeing pupils and that the active efforts of teachers and administrators are required to promote the acceptance of the former on the playground. As in the case of blind day-school pupils, however, certain extra-curricular activities, which are in the nature of physical training, can be entered into without difficulty by partially seeing children. Apart from the information collected by Myers, scanty data are available concerning the health and physical education of sight-saving class children in this country. An investigation of this field through the examination of medical reports, teachers' judgments, and a study of physical education facilities actually provided for partially seeing pupils undoubtedly would be of value in pointing out phases requiring improvement or further research.

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[30] *Ibid.*, p. 45.

[31] Coffin, Helen J., "The Conservation of Vision as a Function of the Public Schools," *A. A. I. B. Proceedings*, 1930, pp. 497-503.

Summary.—It is the consensus of opinion that the physical vigor of blind children generally is inferior to that of the seeing. The principal reasons for this inferiority probably are: (1) faulty pre-school training; (2) the fact that absence of vision restricts physical activity; and (3) the presence of additional defects or weaknesses resulting from the illness, accident, or congenital condition causing blindness.

An improvement in the pre-school care of children without sight through parent training probably would result in an increase of physical stamina among pupils entering schools and classes for the blind. The encouragement of bodily activity at home and in school, and the proper treatment of other physical defects, also, would improve the general health of blind children. The importance of competent medical service in schools and classes for the blind cannot be overemphasized. While the majority of these agencies provide medical attention for their pupils, it is impossible to estimate the quality of this service.

The correction of postural defects through systematic treatment and exercise is another important phase of the health program of schools and classes for the blind. Surveys have shown that children without sight frequently suffer from one or more postural abnormalities which will respond to treatment. Since a good appearance is a valuable social and economic asset to a blind individual, and since correct posture is so important a factor in health, adequate provision for this type of work should be made in all schools and classes for children without sight.

While calisthenics and formal gymnastics may be of value in the physical training of blind pupils, there is a danger that they may become an end in themselves rather than a means for the physical development of boys and girls. The aim should be, therefore, to encourage less formal types of exercise such as games and dancing. Teaching physical education to blind pupils is very difficult, since each child requires individual attention. The successful instructor, therefore, must possess unlimited patience and endurance as well as ingenuity and resourcefulness. Day-school classes for children without sight have been criticized for their failure to provide means for the physical training of their pupils. While this criticism may be justified in some instances, a number of day-school classes have arranged for gymnasium periods outside regular school hours.

Although the majority of residential schools possess adequate playground space and equipment, the general lack of constructive supervision limits the value of outdoor play among blind children. This is unfortunate, since there are many games and play projects in which children without sight can participate if instruction and supervision are available. Competitive athletics in schools for the blind are of value not only as a means of physical education, but also as a stimulus to good sportsmanship and school spirit. The tendency to feature children with considerable vision and those of greatest physical prowess in games and athletic events should be avoided, if playground activities are to perform their proper functions as part of the health program. It seems probable that blind children attending day-school classes do not join readily in the playground activites of the seeing and that encouragement and supervision are required.

The importance of correct diet has not been realized by the majority of residential schools for the blind due, probably, to a misunderstanding of the nature and function of the science of dietetics. The need for correct diet, however, is even greater among blind children than is the case among those who see, because of the low vitality of the former. Recent experiments show that a good diet can be provided in schools for the blind at a per capita cost of from 25 to 28 cents per day. It is advocated, also, that the unit system of feeding be adopted since this is the only way in which food can be made to retain its flavor and nutritive value. While the cottage system of housing, which obtains in a few residential schools for the blind, is well adapted to unit feeding, the existence of the system in itself does not guarantee correct diet. It is quite as possible to serve inferior and badly cooked food from a small kitchen as from a large one, and the cottage system does not, therefore, obviate the necessity for the services of a competent dietitian.

According to data collected by Myers, the health of pupils in sight-saving classes is about the same as that of the general school population. A number of physical defects in addition to visual handicaps, however, were reported. The presence of underweight and anaemia among these defects indicates that more attention should be paid to the dietary and home conditions of partially seeing children. Most of the methods of physical training employed with normally seeing children, also, can be utilized with sight-saving class pupils. Care must be taken, however, not to allow children suffering from certain ocular diseases to participate in too violent forms of exercise. As in the case of blind pupils in day-school classes, partially seeing children may not always mingle freely with the physically normal on the playground unless encouragement and supervision are provided. There is need for a comprehensive investigation of the health problems of partially seeing children in order to discover the best means of promoting their physical welfare and eliminating defects in addition to their visual handicaps.

CHAPTER VIII

THE INTELLIGENCE OF VISUALLY HANDICAPPED CHILDREN

The Development of Intelligence Tests for Blind Children.—Since the time of Diderot philosophers and psychologists have been more or less interested in the problem as to the effect of blindness upon mental development, but the majority of the earlier discussions were of an abstract, speculative nature. In 1894, however, Dow[1] pointed out the need of applying psychological tests to the blind in order to ascertain the mental differences resulting from lack of vision. Binet also appears to have been interested in the psychological aspects of sensory defects. In 1901, during his investigations of cephalic measurements as an index to mental ability, he published two studies dealing respectively with the cranial dimensions of the blind and the deaf as compared with those of the physically normal.[2, 3]

No direct attempt was made in this country to construct a scale of tests for measuring the intelligence of blind children, however, until 1914. In the summer of that year R. B. Irwin[4] (then director of classes for the blind and partially seeing in the Cleveland public schools) went to Vineland, New Jersey, for the purpose of working out such a scale in coöperation with Dr. H. H. Goddard. Taking Goddard's translation and adaptation of Binet's 1911 scale, they first struck out all tests which necessitated the use of vision. The remaining tests were then rearranged in year groups according to Irwin's judgment of the normal abilities of blind children at various age levels. The scale was first tried out in the

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[1] Dow, James J., "Suggestions for Studies in Psychology," *A. A. I. B. Proceedings,* 1894, p. 37.

[2] Binet, A., "Les Proportions du Crane Chez les Aveugles," *L'Année Psychologique,* VIII, 1901, pp. 369-384.

[3] Binet, A., "Les Proportions du Crane Chez les Sourds-Muets," *L'Année Psychologique,* VIII, 1901, pp. 385-389.

[4] Irwin, R. B., "A Binet Scale for the Blind," *Outlook for the Blind,* Autumn, 1914, pp. 95-97.

Sunshine Home for Blind Babies in Brooklyn, New York, and the Arthur Home for Blind Babies at Summit, New Jersey, and later in other institutions and day-school classes for children without sight. Experience with this first scale soon showed that it was not a very accurate instrument for measuring the intelligence of the blind, since there were too few tests, and certain of those included were located in the wrong year groups. In discussing this pioneer attempt Irwin emphasizes the fact that no claim for its final accuracy was made. It was intended simply as a beginning from which more satisfactory methods could be evolved and, like other pioneer efforts, its chief value lies in the interest which it stimulated in testing the intelligence of blind children.

In 1915 Dr. Thomas H. Haines[5] of Ohio State University, at the suggestion of Irwin, made a mental survey of 224 pupils at the Ohio School for the Blind. This work resulted in an adaptation of the Yerkes-Bridges Point Scale which follows a somewhat different procedure[6] from that adhered to previously. Tests depending primarily upon vision were eliminated, but instead of rearranging those which remained, substitute tests not requiring sight were introduced. For example, tactual discrimination of two kinds of cloth, e.g., velvet and serge, was substituted for the test of aesthetic comparison wherein the subject ordinarily is required to choose the prettier of two pictures. In 1916 he published a monograph[7] describing these tests and their standardization, other cases being added later in a supplementary article.[8]

Throughout his work, Haines stressed the importance of the mental differences between children totally blind from birth or very early childhood and those whose sight either was lost much later or who still retained a considerable degree of vision. He believed that these differences were of sufficient significance to make it unfair to include any but congenital or early adventitious total cases in standardizing an intelligence scale for blind children. Since he found only fifty-eight pupils who could be classified as blind, his standardization is thus based upon a very small number of cases. Although there appears to be no conclusive evidence upon this question, such studies as have been made indicate that the age of blinding and degree of remaining vision are not so important as Haines believed.[9] He concluded that "blind" children (according to his definition) were not particularly inferior to seeing children in intelligence. It is of interest to note in this connection that the blind are inferior to the seeing in orientation tests, but excel them in rote memory.

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[5] Haines, T. H., "A Psychological Survey of the Ohio State School for the Blind," *Outlook for the Blind,* Winter, 1916, pp. 88-92.

[6] Instead of comparing the child's performance with that of other children of other ages (as in an age scale), the child's performance (in the point scale) is compared only with that of other children of his own age. Consult: Freeman, F. N., *Mental Tests: Their History, Principles and Applications,* Houghton Mifflin Company, Boston, 1926, p. 134.

[7] Haines, Thomas H., "Mental Measurements of the Blind," XXI, April, 1916, *Psychological Monograph.*

[8] Haines, Thomas H., "Report of New Cases and More Reliable Age Norms of Intelligence by the Point Scale for the Blind," *Journal of Educational Psychology,* March, 1919, pp. 165-167.

During the years immediately following the work of Irwin and Haines, Dr. W. B. Drummond, profiting by their experience, tested ninety-six blind children in England and Scotland, comparing them with eighty-eight seeing children (with their eyes closed). In 1920 he published *A Binet Scale for the Blind and a Provisional Point Scale for the Blind*[10] which included tests used by Irwin, Haines, and Terman, as well as those drawn from other sources. Drummond also emphasized the mental differences of children totally blind from birth or from an early age as compared with later adventitious cases and those retaining some vision.

Dr. O. H. Burritt had been interested in the problem of measuring the intelligence of blind children for some years and, in 1916, a department of psychological research was organized at the Pennsylvania Institution for the Instruction of the Blind under the direction of Dr. S. P. Hayes.[11] During this year, also, Perkins Institution added a resident psychological examiner to its staff, and three years later in 1919 both departments were placed under Dr. Hayes's supervision.[12] From this time until 1923 the work of these two departments consisted chiefly in adapting and standardizing Terman's Revision of the Binet Scale so that it might be used with blind pupils. It was decided to retain Terman's arrangement of tests in so far as possible, substituting other tests for those requiring vision. In this way it was hoped that a comparison between the intelligence of blind and seeing children could be obtained which might prove helpful to instructors of the former. In standardizing the tests all children were included who could be regarded technically as blind, differences in age of blinding and degree of remaining vision being disregarded.

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[9] Hayes, S. P., *Terman's Condensed Guide for the Stanford Revision of the Binet-Simon Intelligence Tests Adapted for Use With the Blind,* p. 4.

[10] Drummond, W. B., "A Binet Scale for the Blind and a Provisional Point Scale for the Blind," reprinted from the *Edinburgh Medical Journal,* 1920.

[11] Hayes, S. P., *Ten Years of Psychological Research in Schools for the Blind,* p. 3.

In 1923 a tentative adaptation of the Stanford Binet Scale was compiled, the results being "based upon a careful, though not yet complete statistical study of passes and failures by age groups, supplemented by the judgment of those who have used the tests continuously for a number of years."[13] A handbook for administering the tests was prepared by pasting into Terman's *Condensed Guide* typewritten sheets covering the changes which had been made in adapting the scale for use with blind children. Although this scale served its purpose fairly well for a number of years, it was felt that it was not completely satisfactory, since in some respects it seemed to give too great an advantage to blind children. After further study, therefore, a revision was published in 1930 which is intended to remedy this defect and to make the scale more valid.[14] Whereas the 1923 adaptation did not supply six suitable tests for each year group, the new scale has introduced a sufficient number of tests from other sources to make this possible, and special record blanks, also, have been printed for the convenience of examiners.

In addition to the individual tests just described, an effort has been made to adapt certain group intelligence tests so that they may be used with the blind.[15] This has not proved to be an easy task, however, because of the difficulty involved in equating the mechanics of Braille reading and writing with the standardized methods of administration employed with seeing children. Nevertheless, a few tests have been tried with a fair degree of success. The most recent adaptation is that of the Otis Classification Test, Form A, Part II, standardized upon 210 blind pupils ranging in age from 10 years to 36 years.[16]

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[12] *Ibid.*, p. 5.

[13] Hayes, S. P., "Preface to the Adaptation of the Terman-Binet Scale," *Outlook for the Blind*, XVII, December, 1923, p. 27.

[14] Hayes, S. P., *Terman's Condensed Guide for the Stanford Revision of the Binet-Simon Intelligence Tests Adapted for Use with the Blind.*

While Haines found no significant difference between the intelligence of blind and seeing children, the results obtained by Hayes (which include late adventitious cases and those with partial vision) show that the blind are somewhat inferior.[17] Hayes[18] and Muhl[19] indicate that the vocabulary of blind children is below that of seeing children of the same age. This fact may be responsible, to some extent, for the apparent inferiority of the former in general intelligence, since a majority of the tests included in the scale are verbal in nature. Experience also tends to show that totally blind children usually are of better mentality than those possessing some vision, and this factor may explain partially why the presence of these children in the testing program brings the curve of intelligence for blind children generally below that of the seeing.

There is need of a thorough investigation of the relative intelligence of totally blind children and those who possess some degree of vision, but who, nevertheless, must be educated in schools and classes for the blind. There is need, also, for further research on the psychological differences resulting from age of blinding and degree of remaining vision. Such investigations may show that it is wholly unfair to group these different classes of blind children together for purposes of standardizing intelligence tests or estimating the general mental level of blind children as a whole.

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[15] Hayes, S. P., *Self-Surveys in Schools for the Blind.*

[16] Sargent, Ruth, "The Otis Classification Test—Form A, Part II" (Adapted for Use with Classes of Blind Children), *The Teachers Forum,* IV, November, 1931, pp. 30-33.

[17] Hayes, S. P., *Terman's Condensed Guide for the Stanford Revision of the Binet-Simon Intelligence Tests Adapted for Use with the Blind.*

[18] The vocabulary standards used for testing the intelligence of blind children are approximately two years below those of the seeing. Compare: Hayes, S. P., *Terman's Condensed Guide for the Stanford Revision of the Binet-Simon Intelligence Tests Adapted for Use with the Blind,* p. 43, with Terman, Lewis M., *The Measurement of Intelligence,* Houghton Mifflin Company, Boston, 1916, p. 226.

[19] Muhl, Anita M., "Results of Psychometric and Personality Studies of Blind Children at the California State School for the Blind," *A. A. I. B. Proceedings,* 1930, p. 568.

Non-Verbal Tests of Intelligence.—In addition to the individual and group measurements of general mental ability described above, some attempts have been made to develop certain non-verbal tests of intelligence for use with blind children. Although sporadic efforts have been made to adapt some of the more common performance tests, the results have not been very satisfactory.[20] The finger and stylus mazes, however, offer better possibilities, and fairly successful experiments with them in comparing the learning ability of the blind and seeing have been reported.

Koch and Ufkess[21] found blind adolescents inferior in maze learning to a matched group of seeing subjects. They concluded, also, that blind children who had possessed vision for a number of years did somewhat better than the congenitally blind. Those of presumably better general mental ability seemed to have much less difficulty in mastering the maze. Since the general intelligence of the blind subjects was determined by reading aloud to them the questions from a standardized group test, ignoring the time factor, the validity of the ratings obtained seems questionable. Furthermore, results are based on nineteen blind subjects only, a number which hardly warrants final conclusions.

A more recent study of the maze learning of blind compared with seeing children is that of Knotts and Miles.[22] Two mazes were used in this investigation—the stylus maze and the high relief maze. Forty blind children ranging in age from fourteen to twenty were matched carefully as to sex, mental age, and chronological age with forty seeing children. These were divided into two groups of twenty pairs each, one group using the stylus and the other the high relief maze. To equalize the experimental situation, all children, both blind and seeing, were blindfolded during the trials. The problem for each group was to learn its respective maze without error, which the majority of subjects accomplished successfully. The results showed the blind children to be somewhat superior to the seeing in learning both types of maze, although the variability of the former was considerably greater. The high relief maze was easier for the blind subjects than was the stylus maze. Mental age correlated more highly with success in maze learning than did chronological age. Learning, also, was influenced by the extent and duration of blindness. While these findings show that the hand maze is well adapted for measuring the learning ability of blind individuals, their validity would have been enhanced if more subjects had been included in the experiment.

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[20] During 1927-28 Miss Margaret Owen used seven of the performance tests in the Pintner-Paterson Scale with 56 totally blind pupils at Perkins Institution. Results showed her method to be unsatisfactory for evaluating the mental ability of blind pupils. She indicates, however, that her data may be of value in rating character traits, temperament, and manual skill. (This report is unpublished.)

[21] Koch, Helen L., and Ufkess, Jennette, "A Comparative Study of Stylus Maze Learning by Blind and Seeing Subjects," *Journal of Experimental Psychology*, April, 1926, pp. 118-131.

The finger maze used by Koch and Ufkess also was employed by Duncan[23] in her study of the maze-learning ability of blind and seeing subjects. Thirty pupils from the Texas School for the Blind, ranging in age from thirteen to twenty-five years, were paired with thirty seeing students from senior high school. The groups were equated on the basis of chronological age and scores made on the Chapman Group Intelligence Examination. Twenty-nine blind subjects in addition to those in the paired groups were used in obtaining data on maze learning. The criteria of learning were the number of trials, the number of errors, and the total time required for three consecutive, correct tracings of the maze. The results given showed slight differences between the two

[22] Knotts, J. R., and Miles, W. R., "The Maze-Learning Ability of Blind Compared with Sighted Children," *Journal of Genetic Psychology,* March, 1929, pp. 21-50.

[23] Duncan, Bertha K., "A Comparative Study of Finger Maze Learning by Blind and Sighted Subjects," unpublished.

FIGURE 6

Distribution of I.Q.'s in a Representative School for the Blind, 1924-1930

	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30
Probably Feeble-minded (Below 70 I.Q.)	7.2	11.6	10.1	10.8	12.2	10.7
Dull and Border-line (70-89 I.Q.)	26.4	29.6	34.7	32.4	31.2	34.3
Average (90-109 I.Q.)	37.5	43.1	39.7	39.0	37.1	37.7
Superior (110-140 I.Q.)	26.0	14.8	14.6	11.2	13.2	14.4
Not Tested	2.9	.9	.9	6.6	6.3	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

groups, but since the statistical significance of these differences was not computed, it is impossible to determine which group is superior. For all subjects intelligence correlated more highly with success in maze learning than did chronological age. The amount of visual experience was of greater importance in maze learning than the present degree of sight, and the verbal method of learning was superior.

Since many of the blind probably are penalized on verbal tests of intelligence because of inequality of environmental opportunity, the development of non-language tests, especially those of the maze-learning type, should be a valuable supplement to existing measurements.

The Problem of Mentally Subnormal Blind Children.—The fact that a considerable proportion of blind children are mentally subnormal was recognized long before the introduction of intelligence tests for either the blind or the seeing. Dr. Howe in the Sixteenth Annual Report of Perkins Institution[24] points out that since the blind are admittedly inferior to the seeing in physical vigor, the inevitable inference is that they also are inferior in intellectual capacity. While this explanation of mental deficiency may now appear somewhat out of date, it shows clearly that institutions for the blind in this country encountered the problem of mental subnormality very early in their existence. Nevertheless, no adequate provisions have been made up to the present time for mentally deficient blind children in the United States.[25]

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[24] Howe, S. G., *Sixteenth Annual Report of the Perkins Institution and Massachusetts School for the Blind,* Metcalf and Company, Cambridge, 1848, Appendix A., p. 34.

The incidence of feeble-mindedness among blind children of school age has been variously estimated as from 5 to 20 per cent, and 13.3 to 55 per cent have been classified as dull, backward, or border-line cases, depending upon the definition and limits of mental deficiency employed.[26-29] It may be pointed out in this connection that before educators of the blind can ascertain the extent of this problem, uniform standards for judging the mentality of their pupils should be adopted.

The statement also has been made that the general level of intelligence among children entering schools for the blind is lower at the present time than it was in former years.[30] This is illustrated in Figure 6 which presents the I. Q. distribution of pupils in a representative school for the blind over a six-year period. One reason offered for this decline is the reduction (through the efforts of organizations for the prevention of blindness) of blindness caused by specific eye diseases, such as ophthalmia neonatorum. As a result of this, cases of blindness now found in schools are caused principally by systemic diseases and inherent defects which frequently are accompanied by mental deficiency.

It sometimes is thought that blindness itself is a causative factor in feeble-mindedness, but there appears to be no evidence to substantiate this belief.[31] It undoubtedly is true that lack of vision deprives the child of a most important means of mental development, but this loss can be compensated for to a great extent through a specially selected environment. Furthermore, if absence of vision is a direct cause of mental deficiency, *all* children blind from birth or a very early age should be feeble-minded, which is by no means the case. As emphasized in Chapter IV blind children who through neglect or the over-solicitude of parents have been denied an opportunity for normal physical and mental development, often may appear feeble-minded. Caution must be exercised, therefore, in classifying new entrants as mentally defective, since a few months in a stimulating environment may produce a considerable gain in I. Q.[32]

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[25] Burritt, Olin H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* March, 1931, p. 9.

[26] Burritt, O. H., "A Platform of Principles," *A. A. I. B. Proceedings,* 1924, p. 211.

[27] Hamilton, C. A., Round Table: "Mental and Standard Tests in Schools for the Blind," *A. A. I. B. Proceedings,* 1924, p. 174.

[28] Allen, E. E., "The Feeble-Minded Blind—What Shall the School Do with Them?" *A. A. I. B. Proceedings,* 1916, pp. 30-32.

[29] Hayes, S. P., "Fourth Year of Research Work," reprinted from *Eighty-eighth Annual Report,* Pennsylvania Institution for the Instruction of the Blind, 1920.

[30] Stinchfield, S. M., *Speech Pathology with Methods in Speech Correction,* Expression Company, Boston, 1928, p. 65.

[31] Kite, E. S., "The Feeble-Minded Blind," *Training School Bulletin,* XIII, 1916, pp. 135-141.

For the purpose of the present discussion mentally subnormal blind children may be considered in three groups: (1) those who are non-educable; (2) those who are definitely feeble-minded but educable; and (3) those who are below normal but who are *not* definitely feeble-minded. This is not intended as a strict classification, since overlapping exists among all groups, and even where test ratings are used the proper placement of a blind subnormal child often is hard to determine because of the added difficulty of making suitable allowance for his visual handicap.

A generally accepted standard[33] for excluding children from special classes in public-school systems is a mental age below 5, an intelligence quotient[34] less than 50, and a chronological age under 13. This standard assumes that the child is incapable of learning to read, or to do simple academic work. Such cases generally are recommended for custodial care in institutions for the feeble-minded. This policy should apply, also, to non-educable blind children, since the presence or absence of vision, at this level of intelligence, should make little difference in their treatment. Furthermore, since feeble-mindedness involves social adaptability as well as mentality it may be advisable in some cases to classify blind children as non-educable who have I. Q.'s as high as 60. Cases of this type usually are admitted to schools for the blind on the chance that their condition may be due to neglect and that some improvement may be effected.[35] The difficulty is that once they are admitted it is not always easy to transfer them to an institution for the feeble-minded, and frequently they remain in school several years requiring an undue amount of attention from teachers and matrons. Obviously, provision should be made to have all non-educable blind children taken from schools for the blind as soon as their condition is determined satisfactorily. If institutions for the blind are willing to admit such children on trial, the institution should not be penalized by being forced to retain these special cases at the expense of their normal pupils.

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[32] This has been the experience of the psychological examiners in the Department of Applied Psychology at Perkins Institution.

[33] Davies, Stanley P., "The Institution in Relation to the School System," reprinted from *Proceedings of the Forty-ninth Annual Session of the American Association for the Study of the Feeble-Minded,* May, 1925, p. 8.

[34] The Intelligence Quotient (or I.Q.) expresses the ratio between the mental age (derived from an intelligence test) and the chronological age. It is obtained by dividing the mental age by the chronological age, and multiplying by 100. Consult: Terman, L. M., Op. cit., p. 53.

Children who are definitely feeble-minded yet educable to some extent constitute one of the most serious problems in schools for the blind at the present time. Although, as Burritt points out, no school for the blind admits feeble-minded pupils in theory, in practice all schools have them.[36] There has been considerable discussion among educators of the blind and those interested in the care and training of the mentally deficient as to where blind feeble-minded children should be placed. The consensus of opinion seems to be that, since mental deficiency is the more serious defect, blind feeble-minded children should be received in institutions devoted primarily to the care and training of mental defectives.[37-39]

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[35] Burritt, O. H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* March, 1931, p. 10.

[36] Burritt, O. H., "The Education of the Blind," *Outlook for the Blind,* Winter, 1916, p. 111.

[37] Irwin, R. B., "The Recognition and Training of Blind Feeble-Minded Children," *Outlook for the Blind,* IX, Summer, 1915, p. 32.

[38] Tynan, Maurice I., Holmes, E. T., and Greenlaw, K. F., "Adequate Provision for the Blind Feeble-Minded," *Outlook for the Blind,* September, 1928, p. 34.

[39] Johnson, Alexander, "Children Who Are Doubly Handicapped" (Feeble-minded and Blind), *Training School Bulletin,* May, 1914, p. 41.

There is no agreement, however, as to the provisions which institutions for the feeble-minded should make for the blind children whom they receive. The following three methods of dealing with this problem have been advocated:

(1) Blind feeble-minded children should be diffused as much as possible among seeing inmates, no special instruction for them being provided. It is argued that blind children can profit by the type of hand work generally taught in such an institution, and that no special teacher is required.[40]

(2) Blind feeble-minded children should be received in institutions for mental defectives in groups of not more than ten. The state should allow an extra annual per capita grant of $100 for each blind child, and these extra funds should be devoted to the provision of a special teacher.[41, 42]

(3) The most conveniently located institution for the feeble-minded in any state should be selected as a "training center" to which all educable blind feeble-minded children should be brought. The larger numbers of blind children resulting from this plan would warrant the introduction of special facilities for their training.[43]

It seems doubtful if the first plan is quite fair to the blind feeble-minded child who is capable of receiving instruction. Would it be possible for him to profit by the training in hand work designed for seeing feeble-minded children unless special instruction was provided? Would there not be a tendency, because of his visual defect, to classify him with seeing companions of a much lower level of intelligence than himself? It must not be forgotten that the blind feeble-minded child is entitled to the highest point of development of which he is capable, and any arrangement which causes him

[40] *Ibid.*, p. 41.

[41] "Custodial Care of the Blind Feeble-Minded," *Report of Commission to Study Conditions Relating to Blind Persons in Pennsylvania,* 1925, p. 51.

[42] For some years the Massachusetts Dispensary at Tewksbury has employed a special teacher for its blind inmates, and more recently the new Lisbon, New Jersey, Institution for the Feeble-minded has established a class for the blind. Consult: *The Teachers Forum,* IV, May, 1932, p. 94.

[43] *Conference on the Blind Feeble-Minded,* Pennsylvania State Council for the Blind, Harrisburg, Pennsylvania, March 7, 1928, 6 pages Mss.

to be penalized because of his visual handicap cannot be regarded as satisfactory.

The second plan is, perhaps, the most suitable of the three if the state and the institutions for the feeble-minded can be persuaded to coöperate. The difficulty again is, however, that unless all blind children cared for under this plan were very low grade it would be difficult, if not impossible, to provide suitable training for them with the small funds available. The extra annual income of $1000 would scarcely pay for the services of a special teacher, to say nothing of necessary apparatus. Furthermore, would a larger amount expended on so small a group of children be justifiable?

The third plan has not met with general favor either among educators of blind children or those in charge of the feeble-minded. It is argued that the total number of educable blind feeble-minded children is too small to warrant the expense of such a project, and that few, if any, institutions for the feeble-minded could accommodate a segregated group of this kind.

One outstanding difficulty with all three of the above proposals is that most institutions for the feeble-minded already are overcrowded with seeing mental defectives and are, therefore, unwilling to accept blind feeble-minded children unless they are uneducable. It is pointed out that not all blind children with I. Q.'s below 70 are feeble-minded to an extent which warrants their admission to a special institution. Schools for the blind which have all necessary apparatus should endeavor to adapt their curricula to individual capacities rather than attempt to place all children who cannot profit by the traditional course of study in an institution for the feeble-minded.[44]

On the other hand, residential institutions for the education of the blind reply that their function is to instruct mentally normal blind children, and that pupils who are feeble-minded must be cared for elsewhere. It undoubtedly is true that the mingling of normal and subnormal blind children in residential schools is injurious to both groups. The academic progress of the former is retarded, while the latter frequently are prevented from exerting their best efforts because of discouragement through association with children of a higher level of intelligence. Furthermore, the contacts between normal and feeble-minded children outside the classroom are seldom desirable; in fact, it has been stated that this out-of-school association between normals and subnormals is far more injurious than association in the classroom.[45] The presence of mannerisms, sex perversion, and other undesirable habits among a large proportion of the blind feeble-minded undoubtedly makes such out-of-school association between them and the normal blind pupils extremely dangerous to the latter, although the retardation caused by the presence of feeble-minded children in the classroom is of no small importance.

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[44] *Ibid.*, p. 2.

In order to meet the above objections it has been suggested that a special "observation cottage" be set apart for the feeble-minded pupils in a residential school for the blind.[46] According to this plan all mentally subnormal children would be segregated from those of normal intelligence, and under expert training and guidance, would be given an opportunity to demonstrate such ability as they possessed. If, after a reasonable period of probation, it was shown that they were either uneducable, or unable to profit further by the instruction and training provided, they would be dismissed and recommended for admission to a school for the feeble-minded. If this could not be arranged the state might provide special home teachers whose duties would include the social supervision of such cases.

While the idea of an "observation cottage" has not yet been put into practice, it seems to offer at least a partial solution of the difficult problem concerning the feeble-minded pupils in residential schools for the blind. Probably the most valid objection is that it might eventually become a custodial institution and use up funds intended for the education of normal blind children.[47] Retaining children who had proved uneducable or unable to profit further by the training offered would have to be guarded against carefully, although a certain amount of difficulty might be involved in the dismissal of such pupils. The outstanding advantages of the plan are: (1) that it would remove feeble-minded children from association and competition with those of normal ability; and (2) it would allow the intensive study of the capacities of mentally subnormal blind children and the development of suitable curricula for them. There is great need for a thorough study of the blind feeble-minded child in order to determine what his capacities are and along what lines his training should proceed. Heretofore, mentally deficient blind children who could not profit by the regular school instruction have received little supervision and have been allowed to develop undesirable personal habits. It cannot be expected that institutions for the feeble-minded, even if they do admit subnormal blind children, can afford either the time or the money to study methods of training them. This responsibility rests with the schools for the blind, and until they accept it little progress will be made. They should not become institutions for the permanent custodial care of the blind feeble-minded, but they should provide training for those who are educable until maximum development is attained. If custodial care is required after this point is reached, the blind pupils should be transferred either to a special institution for that particular purpose or to an ordinary institution for mental defectives where they should be classified according to mental ability, without reference to their lack of vision.[48] It is realized, of course, that many blind feeble-minded individuals need custodial care, even more than do the feeble-minded who see and that the provision of such care is most important.[49]

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[45] Dow, J. J., "Borderline Cases in Special Schools," *Outlook for the Blind,* VI, Autumn, 1912, p. 66.

[46] Burritt, O. H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* March, 1931, pp. 10 and 11.

The third group of mentally subnormal blind children—the dull and backward but not definitely feeble-minded—constitutes a problem which must be dealt with solely by schools and classes for the blind. It may be pointed out in this connection that since the majority of public-school classes for blind children refuse to admit pupils of an I.Q less than 70, they are not generally required to deal with cases of definite feeble-mindedness as are the residential schools. Both agencies, however, are obliged to accept dull and backward children.

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[47] Allen, E. E., "The Problem of the Feeble-Minded Blind Child," reprint from *Eighty-sixth Annual Report,* 1917, p. 10.

[48] See comment of Mr. Dow in: Allen, E. E., "The Feeble-Minded Blind—What Shall the School Do with Them?" *A. A. I. B. Proceedings,* 1916, p. 32.

[49] Burritt, O. H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* March, 1931, p. 10.

Little special provision for this class of children appears to have been made up to the present time in either day-school classes or residential institutions. Some of the latter have adopted a flexible grading system,[50] while a few have formed special classes for backward children,[51] removing them from active competition with those of a higher level of intelligence. An attempt also has been made in some instances to adjust the program of day-school classes to individual abilities, increasing the amount of hand work for those of inferior mental capacity.

A special residential school for backward blind children and a special day-school class for children of the same type have been opened in Pennsylvania, the former at King of Prussia,[52] while the latter is located in Philadelphia.[53] The residential school is not a custodial institution, but simply receives dull and backward blind pupils, endeavoring to supply an environment wherein such ability as they possess may be developed to the maximum degree. The special day-school class follows a similar policy but, obviously, is unable to control the environment of pupils as completely as does the residential school. A simple program is followed, the aim being to give the children as much functioning information, both social and educational, as they are capable of receiving.

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[50] *Third Biennial Report for the Period Ending June 30, 1928,* California School for the Blind, Berkeley, California, 1929, p. 8.

[51] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 28.

[52] Greaves, Mrs. Jessie Royer, "What Shall We Do with Our Backward Blind Children?" *A. A. I. B. Proceedings,* 1926, pp. 306-309.

[53] Summers, Mary D., "Placement of the Sub-Normal Blind Child," *The Teachers Forum,* September, 1930, pp. 13-16.

An obvious need exists for intensive research in working out special facilities for the training of dull and backward blind children. This responsibility rests upon the educators of the blind, and should not be shifted to other agencies. A thorough study of retarded blind children should be made, with special reference to determining what type of program is best suited to their needs. When this is ascertained, ability grouping in schools for the blind may be put into general practice with beneficial results.

The Need of Special Provisions for Mentally Superior Blind Children.—Since 1867 educators of seeing children have been concerned with the problem of providing suitable instruction for mentally superior pupils.[54] Little attempt has been made among educators of the blind, however, to work out a program especially adapted to the needs and abilities of gifted children without sight. The principal reason for this neglect probably is the relatively small number of such children, for available data indicate that the proportion of intellectually superior individuals among the blind is less than in the general school population.[55] There also is a tendency to believe that children who can maintain a satisfactory standard of work in the traditional academic subjects merit no particular consideration. It should be remembered, however, that if blind children are to become economically and socially competent they must be given an opportunity to develop their special gifts.

With possibly one exception[56] the provisions for gifted blind children which do exist are similar to those which characterized the work for mentally superior seeing pupils approximately a quarter of a century ago. Thus, a few schools for the blind have introduced various rapid-promotion schemes such as the Dalton Plan[57] and other systems of flexible grading. Those experienced in the education of gifted children, however, now advocate enrichment of curricula[58] rather than acceleration because of frequent social maladjustments resulting from too rapid promotion. Since blind children generally are educationally retarded because of the inherent slowness of methods used in their instruction, a certain amount of acceleration for those of superior intelligence may be advisable in the lower grades. The social disadvantages of acceleration in the ordinary public schools probably are not present to the same extent in schools for the blind, because there is more mingling of older and younger pupils. After a mentally superior pupil has been advanced to a point where he is no longer over age for his grade, enrichment should be introduced.

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[54] Goddard, H. H., *School Training of Gifted Children,* World Book Company, Yonkers-on-Hudson, New York, 1928, p. 1.

[55] Hayes, S. P., "The Work of the Department of Psychological Research at the Pennsylvania Institution for the Instruction of the Blind," *Outlook for the Blind,* Spring, 1920, p. 8.

[56] Miss Frances Blend, Assistant Supervisor of Classes for Handicapped Children, Los Angeles, California, is working out an experiment with a class of superior blind children.

[57] *The Dalton Laboratory Plan in a School for the Blind,* Educational Publications No. 1, Series I, Administration and Supervision, Bureau of Re-

Look up.

The organization of special classes for superior children in schools for the blind presents many administrative difficulties. It is necessary first to determine the degree of intellectual superiority which shall make children eligible for such classes. For example, shall all those with I.Q.'s above 110 be included, or shall eligibility be restricted to those above 120 I.Q., 130 I.Q., or even higher?[59] In providing facilities for seeing gifted children it has been found necessary to include the *relatively* superior in order to have sufficiently large groups to form classes. Although such classes for blind pupils probably should not be more than half as large as is customary with the seeing, the small enrolment of schools and the possibility of a smaller proportion of gifted children would seem to justify the inclusion of pupils with I.Q.'s of 110 and above, if the range is not too great. In general, it has not been found very satisfactory to include those whose intelligence is below this level, although exceptions may occur.

It also has been emphasized that the admission of children to special classes on the basis of I.Q. alone is a dangerous procedure. Intelligence scores undoubtedly are the most im-

search and Education, American Foundation for the Blind, Inc., New York, August, 1926. 17 pages.

[58] "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection, 1930,* p. 244.

[59] According to Terman's classification I.Q.'s of 90-110 are considered normal, 110-120 superior, 120-140 very superior, and above 140, genius or near genius. Consult: Terman, L. M., Op. cit., p. 79 .

portant criterion, but as Goddard[60] points out, mental tests have not yet reached a degree of infallibility which enables administrators to admit a child with an I.Q. of 120 to a special class for the gifted, and exclude one with an I.Q of 119. The mental measurements which have been developed for blind children certainly are no more accurate than those in general use among the seeing, and there is need for caution, therefore, in using them as a sole means of judging a child's eligibility for a special class. In small schools and classes for the blind where there are too few superior children to permit the organization of a special group, extra individual instruction and encouragement of creative effort appear to be the most practicable methods of dealing with the situation. It might be possible, eventually, to form centers for the instruction of gifted blind children at various residential schools for the blind with special state scholarships provided to defray the expense involved. If genuine interest could be aroused among educators of the blind concerning this problem, the administrative difficulties undoubtedly could be overcome in time. Although an effort is being made to establish a special day-school class for superior blind pupils, it seems probable that this plan will be suitable only in large centers of population.

Another important problem in addition to those of organization and administration of special classes for gifted blind children is to determine what types of enrichment should be included in the program. While certain forms of enrichment which have been suggested for gifted seeing pupils[61] may be suitable for those without sight, others, such as typewriting, could hardly be considered so unless introduced in earlier grades than is customary. Gifted blind children ought to be provided with opportunities for exercising initiative, and for assuming responsibility. Furthermore, they should be allowed greater freedom in their methods of work and should be encouraged in creative effort of all types, while less drill and explanation would probably aid in their acceleration.

Adequate research, however, is needed to determine what forms of enrichment are best suited to the special needs of gifted blind children. This is a phase of the education of the blind which as yet has been practically untouched and, therefore, offers many possibilities for careful investigation. It will be necessary, however, to secure the coöperation of superintendents and teachers of schools and classes for the blind in order to work out an effective method of dealing with mentally superior blind children.

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[60] Goddard, H. H., Op. cit., p. 72.

[61] Stedman, Lulu M., *Education of Gifted Children,* World Book Company, Yonkers-on-Hudson, New York, 1924, pp. 187-189.

The Intelligence of Partially Seeing Children in Sight-Saving Classes.—There is little available information at the present time concerning the level of general intelligence among sight-saving class pupils in this country. When these classes were organized there was a tendency on the part of school administrators to assign to them mentally subnormal children whose visual defects might be negligible. Those interested in sight-saving work, however, have rightly protested against this practice, and more recent admission requirements set up for many of these classes stipulate that the children enrolled shall be of normal mentality.[62] Nevertheless, Myers found a number of pupils in sight-saving classes whose intelligence was below average.[63] It will be noted, also, that most sight-saving classes are quite willing to accept dull and retarded children, although no special provisions appear to have been made for them. It has been suggested that in communities where there is a sufficient number of mentally inferior sight-saving class pupils a special class should be formed.[64, 65] It is advocated, further, that in isolated cases where there is a double handicap of low mentality and defective vision the children should be absorbed in special public-school classes for the feeble-minded.[66]

In his survey of sight-saving classes, Myers asked either for the I.Q.'s of pupils, or, if these were unavailable, for teachers' judgments based upon a five-fold classification—"deficient," "poor," "fair," "good," and "superior." He assumed that these I.Q.'s were obtained from individual psychological examinations so adapted as not to penalize the child with a visual defect.[67] If this assumption is correct, then the I.Q.'s submitted probably are fairly indicative of the mentality of the children represented. On the other hand, if group tests were used in some instances and no allowance made for visual handicaps, the results may be inaccurate.

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[62] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 204.

[63] Myers, Edward T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* p. 58.

[64] Hadley, Hazel, and Hathaway, Winifred, *Sight-Saving Classes, Their Organization and Administration,* p. 22.

[65] Burritt, O. H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* March, 1931, p. 11.

[66] *Idem.*

The I.Q.'s of 709 sight-saving class pupils which Myers secured show a preponderance of inferior mentality when distributed according to Woodrow's classification.[68] As Myers points out, however, this probably does not represent a fair sampling of sight-saving class pupils generally, since there is a tendency to give psychological examinations more frequently to children who are having difficulty with school work than to those who are making satisfactory progress.

Teachers' ratings on 1986 sight-saving class pupils show the distribution to be "on the whole, slightly better than would be expected for any unselected group of children."[69] There is, of course, a question as to the accuracy of these ratings, but, as Myers mentions, the small enrolment of sight-saving classes enables the teacher to know her pupils better than would be the case under ordinary school conditions. The wide discrepancy between I.Q.'s and teachers' judgments, however, makes it practically impossible to reach a conclusion as to the mental ability of sight-saving class pupils as a group. It may be that a balance between these two sets of data would represent a more accurate statement of the situation, viz., that the distribution of intelligence among sight-saving class pupils is approximately similar to that of the general school population. While this may be the case, it would be dangerous, in view of the incompleteness of existing information, to accept such an estimate as final.

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[67] Myers, Edward T., Op. cit., p. 58.

[68] Woodrow classifies all I.Q.'s above 140 as near genius or genius; 120-140, very superior; 110-120, superior; 90-110, normal; 80-90, dull, rarely feeble-minded; 70-80, borderline, sometimes dull, often feeble-minded; below 70, feeble-minded; 50-70, moron; 20 or 25-50, imbecile; below 20 or 25, idiot. Consult: Woodrow, Herbert, *Brightness and Dullness in Children,* J. B. Lippincott Company, Philadelphia, 1919, p. 54.

[69] Myers, Edward T., Op. cit., p. 60.

The above facts show clearly the need for a thorough and comprehensive study of the intelligence of sight-saving class pupils by means of special tests which will not penalize the child because of his visual handicap. There, also, is an obvious need for the administration of routine psychological examinations to every sight-saving class pupil. If it is important for teachers of physically normal children to know something of the mental ability of their pupils, it is doubly important for the sight-saving class teacher to possess such information. If the sight-saving program is to be thoroughly effective, teachers and supervisors must understand not only the physical limitations of the children under their guidance but also their general mental capacities, special gifts, and disabilities.

Summary.—Although Dow advocated psychological studies of the blind in 1894 and Binet compared the cranial proportions of the blind and seeing in 1901, no direct attempt was made to work out a scale of intelligence tests for those without sight until 1914. The first tests which were adapted by H. H. Goddard and R. B. Irwin were based on Binet's 1911 scale and, while admittedly rough, they served to stimulate interest in the problem of intelligence testing among the blind. In 1915 T. H. Haines made a psychological survey of the Ohio School for the Blind using an adaptation of the Yerkes-Bridge Point Scale. Since only totally blind children were included, the standardization is based upon a very small number of cases. In 1916 psychological research was begun at the Pennsylvania Institution for the Instruction of the Blind and in the same year intelligence testing was introduced at the Perkins Institution and Massachusetts School for the Blind. In 1919 these two departments were consolidated under the direction of S. P. Hayes. The Irwin-Hayes modification of Terman's Revision of the Binet-Simon Scale issued in 1923 has been supplanted by a more satisfactory adaptation published in 1930. An attempt also was made to adapt certain group intelligence tests for use with the blind.

No significant difference between the intelligence of blind and seeing children was found by Haines, but the results obtained by Hayes show those without sight to be somewhat inferior.

Except for maze tests, little success has been attained in developing non-verbal measures of intelligence for the blind. The studies of Koch and Ufkess, Knotts and Miles, and Duncan show the hand maze to be well adapted to measure the learning ability of those without sight.

No adequate provision has been made in this country to cope with the problem of mentally subnormal pupils in schools for the blind. It is difficult to ascertain the extent of the problem because of the lack of definite standards. Three general classifications are suggested: (1) blind children who are uneducable; (2) blind children who are definitely feeble-minded yet educable; and (3) blind children who are dull and backward but not definitely feeble-minded. Those included in the first of these classifications should be cared for in institutions for the feeble-minded, since the presence or absence of vision makes little difference at this level of intelligence. It is the consensus of opinion that educable blind feeble-minded children should be admitted to institutions for the mentally defective either diffused among the seeing feeble-minded with no special provisions for training; admitted in small groups with a special teacher provided through an extra per capita grant by the state; or assembled in large numbers at "training centers" established at centrally located institutions for the feeble-minded.

An observation cottage for blind feeble-minded pupils established in residential schools for the blind might go far toward solving the problem. It also would permit the intensive study of these children, and enable educators to work out a program adapted to their abilities.

Dull and backward blind pupils constitute a problem which must be dealt with solely by schools and classes for the blind. A residential school and a special day school already exist for such children where an attempt is made to give them as much functioning knowledge as they are capable of receiving.

Practically nothing has been done to provide special facilities for gifted blind children except the introduction of rapid promotion schemes in a few residential schools. Although the present tendency in the education of gifted seeing pupils is toward enrichment rather than acceleration, the almost universal retardation of blind children may make a certain amount of acceleration desirable. Enrichment might be introduced after pupils had reached the recognized level of achievement for their ages. The administrative problems involved in establishing special classes for gifted blind children probably are even more difficult than those encountered in ordinary public-school systems. Some of the enrichment which has been suggested for seeing pupils of superior intelligence appears suitable for gifted blind children, but careful research should be undertaken to determine what other types of enrichment are desirable for pupils without sight.

No reliable data are available concerning the general intelligence of partially seeing pupils enrolled in sight-saving classes. The intelligence quotients of 709 sight-saving pupils show a distinct inferiority in mental ability. On the other hand, teachers' ratings of the mentality of 1986 partially seeing children show their intelligence to be somewhat better than would be expected from any unselected group of pupils. In communities where there are sufficient numbers of partially seeing children with I.Q.'s below 70 it may be desirable to form special classes for them.

CHAPTER IX

THE SCHOOL ACHIEVEMENT OF VISUALLY HANDICAPPED CHILDREN

Educational Achievement Tests Adapted for Blind Children.—The research in schools for the blind which began in 1916 was concerned not only with the development of methods for measuring intelligence, but also with the adaptation of certain standardized tests of school achievement for use with blind pupils. Hitherto, the school success of children without sight had been judged wholly by teachers' marks and, although the small size of classes resulted in a more intimate knowledge of the children, it was felt that objective ratings would be more satisfactory. Accordingly, in 1921 Hayes published a pamphlet[1] containing, in addition to a number of group intelligence tests, many specially adapted achievement tests in various school subjects. The adaptations are based upon four hundred and fifty pupils from eight to ten schools for the blind, revised in accordance with the suggestions of teachers who had used them.

The aim in these tests was to adhere as strictly as possible to those which could be given orally because of the difficulties and slowness involved in the mechanics of Braille reading and writing. Where the use of Braille could not be avoided, time limits were doubled or trebled. Specific directions were given for administering the tests, and for scoring and interpreting the results. Curves were presented which enabled the teacher to compare the performance of her pupils with the average attainments of other blind children and, also, with those of seeing children. It should be noted in this connection that comparisons were made upon the basis of chronological age rather than upon grade norms.[2]

The educational tests in this pamphlet included among others a selection from the Courtis Practice Tests in Arithmetic; Starch Test of Grammatical Usage; Trabue Sentence

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[1] Hayes, S. P., *Self-Surveys in Schools for the Blind.*

[2] *Ibid.*, p. 2.

Completion Tests, Scales B and J; Harlan's Test of Information in American History; the Starch Dictionary Spelling Test; the Ayres Spelling Test; the Courtis Map Test, and the Hahn-Lackey Geography Test. The Braille material for these scales is prepared and distributed at a nominal cost by the American Printing House for the Blind.

It is not known definitely how widely these measures of achievement have been used in schools for the blind, but it is probable that their use has not been so general as might be desired, and that the majority of schools and classes for the blind still depend upon subjective methods of estimating academic progress. Complete dependence upon tests, however, is hardly advisable at the present stage of their development, but, if supplemented with other data, they generally present a more accurate picture of a child's school accomplishment than do teachers' ratings alone. Furthermore, certain of the tests included in Hayes' Manual have now been superseded by measures of greater validity and reliability. The progress in developing achievement tests for seeing children during the past decade has not been reflected proportionately in the education of the blind, although certain measurements have been adapted since 1921. For example, the Gray Oral Reading Check Tests for Grades 1 through 8 have been put into Braille, and tentative norms for blind children have been published. The tests on Paragraph Meaning, Sentence Meaning, Word Meaning, and Dictation (Spelling) from the old Stanford Achievement Tests, Forms A and B, for both the Advanced and Primary examinations, also, have been adapted for the use of children without sight.[3, 4] More recently, (1928) the Monroe Standardized Silent Reading Tests, Revised,[5] in two equivalent forms, suitable for Grades 3 to 8, have been embossed and are now available.[6]

In conducting surveys in a number of representative

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[3] Maxfield, Kathryn E., *Adaptation of Educational Tests for Use with Blind Pupils.*

[4] Maxfield, Kathryn E., *The Blind Child and His Reading,* pp. 157-166.

[5] Thomas, Margaret Owen, "Monroe's Standardized Silent Reading," *The Teachers Forum,* May, 1930, pp. 6-8.

[6] American Printing House for the Blind, Louisville, Kentucky.

schools for the blind the Department of Special Studies[7] has employed certain standardized achievement tests. Six of the Wisconsin Inventory Tests in Arithmetic,[8] designed to measure skill in fundamental arithmetical processes, were given orally to blind pupils enrolled in Grades 3 to 6 in six residential schools. This survey has been followed by another, using the Stevenson Arithmetic Reading Test[9] (Problem Analysis) I, Form 2. An investigation also has been made of the types of errors in language usage recognized by a typical group of 254 blind children, employing three equivalent forms of the Wilson Language Error Tests.[10]

The adaptation of achievement tests so that they will yield a fair estimate of the abilities of blind children is a difficult problem and requires much careful investigation. Thus, it remains to be shown conclusively whether or not oral adaptations are preferable to those involving the use of Braille. If the oral method of administration is employed with a group, the following questions arise:

(1) How slowly should the test be given?

(2) Should questions be re-read?

(3) To what extent will the teacher's expression influence results?

If the examination is embossed and the children are required to read the questions, the following problems must be considered:

(1) How can the mechanics of reading and writing Braille best be equated with methods used by seeing children?

(2) Can the speed factor be made comparable by doubling or trebling the time limits?

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[7] An experimental school conducted jointly by the American Foundation for the Blind, Inc., and Perkins Institution at Watertown, Massachusetts, from 1927 through June, 1932.

[8] Merry, Frieda Kiefer, "Types of Errors Made in Fundamental Arithmetical Processes by Pupils in Six Schools for the Blind," *The Teachers Forum,* November, 1930, pp. 8-19.

[9] Merry, Frieda Kiefer, "A Survey of the Problem-Solving Ability of Pupils in Six Residential Schools for the Blind," *The Teachers Forum,* III, May, 1931, pp. 12-15.

[10] Merry, Frieda Kiefer, "Common Language Errors Made by a Representative Group of Blind Children," *Motivating Language Lessons Among Blind Children in the Elementary Grades,* pp. 34-47.

(3) In answering multiple-choice questions which procedure is better: copying the selected answer on a separate sheet[11] or rubbing out the preferred answer on the test blank?[12]

In scoring replies written in Braille it often is difficult to make suitable allowance for mechanical errors, since the omission or incorrect placing of a dot may affect the meaning of a reply.

If large numbers of blind children could be tested by some central agency using various methods of procedure, it should be possible to discover which types of adaptation are most suitable, and how much allowance should be made for the handicap of blindness. For example, classes could be so divided that half of the members could answer the even-numbered questions by one method, while the other half could answer the odd-numbered questions by another method. The procedure, then, could be reversed and the results correlated. In making oral adaptations, the tests might be administered first to a group of seeing children in order to determine the effect of oral presentation. It would still be necessary, however, to estimate the differences in the speed of ordinary pencil writing and that of Braille. The latter problem might be solved by giving simple tests in speed of writing to large, comparable groups of blind and seeing children to determine differences in rate. For instance, using a time limit of three minutes Hayes[13] found that blind children write only about one half as fast with Braille slate and stylus as the norms established for seeing children. Caldwell[14] in his study of the reading ability of blind and seeing children correlated scores earned in single time with those earned in unlimited time, and found the speed factor very significant in the case of those without vision. He concludes that blind children require from three to three and a half times longer to complete the Stanford Reading Tests, Forms A and B, than do seeing children. In addition to solving these technical problems it is highly important to enlist the interest and coöperation of superintendents, principals, and teachers in schools and classes for the blind. Unless this is done the expenditure of time and money upon the adaptation of achievement tests will hardly be justified.

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[11] *Idem.*

[12] Thomas, Margaret Owen, Op. cit., p. 6.

[13] Hayes, S. P., *Self-Surveys in Schools for the Blind,* p. 45.

[14] Caldwell, Floyd F., *A Comparison of Blind and Seeing Children in Certain Educational Abilities,* pp. 13, 26.

The Educational Retardation of Blind Children.—Surveys with specially adapted educational measurements have shown that blind pupils generally are below the seeing in average school achievement. The extent of this retardation has been estimated at from two to four years, or even higher, depending upon the particular school subjects and grades considered.[15] Marked differences of achievement in various elementary subjects frequently are found among blind children; that is, one pupil may be considerably above the normal level for his grade and age in one subject and far below it in another.[16] In general Hayes found that pupils without sight are most inferior in reading, arithmetic,[17] and English composition.[18] There also is a tendency for the amount of retardation in certain subjects[19] to increase as blind pupils progress through the grades, so that a child who is only slightly below normal achievement in the first or second grades may become seriously retarded by the time he reaches the sixth grade.

The educational backwardness of blind children is due principally to over-ageness rather than to inferior grade achievement, although the latter often is present to some extent. Comparison of the accomplishment of blind and seeing pupils, therefore, should be made according to chronological age rather than upon the basis of grade classification,[20] otherwise a true picture of the situation will not be obtained. For example, in a recent study of language errors made by blind children, those without vision were superior in grade achievement but did not reach the age standards established for the seeing.[21] This over-ageness, therefore, changes the apparently superior achievement of the former into serious retardation.

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[15] Hayes, S. P., "The Psychology of Blindness," *Teacher of the Blind,* XVI, September, 1927, p. 14.

[16] In exceptional cases the discrepancy may be as wide as from eight to ten years.

[17] Hayes, Samuel P., "Standard Tests in Elementary Subjects in Schools for the Blind," *A. A. I. B. Proceedings,* 1918, pp. 42-54.

[18] Hayes, S. P., "The Psychology of Blindness," *Teacher of the Blind,* XVI, September, 1927, p. 14.

[19] Hayes, S. P., "Can Blind Children Spell?" *Outlook for the Blind,* XVI, Summer, 1922, p. 52.

[20] *Idem.*

As pointed out in Chapter VIII there are two principal causes of educational retardation in blind pupils: (1) the presence of dull and even feeble-minded children in classes with those of average or better intelligence, and (2) the inherent slowness of methods used in the instruction of children without sight. Since the first of these causes already has been discussed, the second only will be considered here. Research and experience show that the blind are able to read tactually only about half as rapidly as the seeing read visually.[22] Since reading is so important a medium in gaining education this apparently unavoidable slowness cannot but result in a lower level of general accomplishment. Writing with a Braille slate, also, is a slow and tedious process, since each dot in every letter must be punched separately with a stylus (see Chapter II, Fig. 3). A certain amount of this retardation might be eliminated in the earlier elementary grades by the introduction of contractions and abbreviations with beginning Braille readers,[23] and the use of the Braille-Writer instead of the slate and stylus with physiologically immature children.[24]

Lack of suitable pre-school training and prolongation of formal kindergarten instruction, also, are possible sources of educational retardation in blind children. Delayed school entrance is a further cause which is difficult to overcome except in states where compulsory school attendance laws for blind children exist and are enforced. Many parents are unwilling to send their handicapped children to a distant residential school until they are ten or twelve years of age, and it frequently happens that children are kept at home until late adolescence when it is practically impossible for schools to educate them. In some states home teachers give blind children elementary instruction in their homes until parents can be persuaded to send them to school.[25] Certain residential institutions maintain a field officer whose duty is to locate blind children, while a number of schools, in their reports and publications, emphasize the necessity of beginning the blind child's education as early as possible. The age of admission to residential institutions varies somewhat according to the kindergarten facilities which they possess. In general, however, the age of admission ranges from six to eight years. Unless the home environment is superior, or satisfactory arrangements for home teaching exist, the blind child probably is penalized by being kept from school longer than is the seeing child. Pechstein, however, in his study of the school success of 240 blind children found that school entrance below the age of seven was an unimportant factor in later academic achievement.[26]

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[21] Merry, Frieda Kiefer, "Common Language Errors Made by a Representative Group of Blind Children," *Motivating Language Lessons Among Blind Children in the Elementary Grades,* p. 46.

[22] Hayes, S. P., "Standard Tests in Elementary Subjects in Schools for the Blind," *A. A. I. B. Proceedings,* 1918, p. 44.

[23] Merry, Frieda Kiefer, "Shall We Teach Contractions to Beginning Braille Readers?" *The Teachers Forum,* V, November, 1932, pp. 35-37.

[24] Merry, Frieda Kiefer, "Shall We Use the Braille Slate or the Braille-Writer with Beginners?" *The Teachers Forum,* III, November, 1930, pp. 3-6.

The age of blinding and degree of remaining vision, also, have been suggested as possible factors influencing the school success of children without sight. Pechstein found that the cases of blindness (due to accident) in the group which he studied presented the best academic record, while congenital cases were poorest in school work.[27] This is accounted for by the frequent physical and nervous disturbances accompanying congenital blindness, whereas accidental cases usually are free from other defects. As pointed out in Chapter VIII, also, the mentality of congenitally blind children is likely to be inferior to that of adventitious cases. Pechstein asserts further that individuals retaining sufficient vision to be tested by the Snellen Cards are equal or superior in accomplishment to the totally blind.[28] Experience, however, does not confirm this finding generally, although it may have characterized the pupils examined by Pechstein.

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[25] Foley, Kate M., "The Home Teacher and the Child of Pre-School Age," *Outlook for the Blind,* December, 1927, p. 43.

[26] Pechstein, Louis A., "Factors Influencing the School Success of the Blind," *School and Society,* January 12, 1924, p. 51.

[27] Pechstein, Louis A., Op. cit., p. 50. These differences probably are *apparent* rather than real, since they are based solely upon arithmetic means, and no measures of reliability are given.

Hayes, in his *Self-Surveys,*[29] and, also, in his *Preliminary Study of the Influence Upon School Success of the Age at Which Vision is Lost*[30] shows that no significant differences in school achievement appear to result from the extent and duration of blindness among pupils. Additional experiments upon larger and more representative groups of blind children are needed to determine whether or not these factors are so important as Pechstein indicates, or so negligible as the findings of Hayes demonstrate.

Certain administrative devices in some residential schools for the blind tend to increase the academic retardation of pupils. Thus, where schoolrooms and residences are combined into a single cottage unit, physical maturity sometimes is made the basis for promotion because of the inadvisability of having adolescent and non-adolescent children in the same living quarters. Thus, a bright pupil who is ready for advanced work must remain in the same class until physical maturity allows him to be promoted; or a dull pupil who is not ready for advancement has to be promoted because of the onset of puberty. It also happens occasionally that malarticulation exists between the elementary and secondary grades, where these are maintained as separate units; hence in passing from one to the other the children are obliged to repeat work already accomplished.

The problem of educational retardation is one of utmost importance in the education of children without sight, although it does not appear to have received the attention it deserves. Over-ageness to a degree where an individual is from twenty to twenty-five years old when he graduates from high school, is, in itself, a serious handicap in addition to that of blindness. While some retardation may be unavoidable, a certain amount of it undoubtedly could be eliminated during the elementary grades by means of time-saving devices such as those already mentioned in connection with Braille reading and writing, and better methods of promotion. The quality of the teaching personnel, also, undoubtedly affects the school success of blind pupils and probably is largely responsible for the wide variations in achievement among different school subjects. Some educators of the blind seem to think that their pupils are better off in school than they would be attempting to make their living in the outside world and that it is doing them a kindness, therefore, to allow them to continue their education as long as possible. This is a mistake, however, for it is only evading the ultimate issue and making its solution more difficult by placing an additional handicap upon blind pupils. If the education of blind children is to be justified on social and economic grounds, it should result in the social efficiency and independence of at least those pupils of average or better ability. It cannot do this, however, if it allows these pupils to waste valuable years in school which might otherwise be turned to advantage later. Every effort should be made, therefore, to discover and remove unnecessary causes of retardation during the elementary period so that pupils may enter advanced educational or vocational work at approximately the same age as is customary for normal seeing children. The problem is more acute in residential institutions than in day-school classes since the latter adhere more strictly to recognized public-school standards. Nevertheless, retardation may develop unless the day-school pupils maintain a rate of promotion similar to that of seeing children in the regular grades. The majority of residential schools, however, are not required to maintain standards similar to those of the public schools and may, consequently, pay less attention to the promotion of their pupils. As mentioned in Chapter VIII, a few schools provide flexible grading systems which speed up the progress of brighter children to some extent. The difficulty is, however, that not all the causes of retardation can be remedied in this way. If worn-out methods of instruction and poor teaching are present, the mere existence of a flexible promotion scheme will not necessarily prevent a pupil from becoming over age for his grade. A comprehensive study of all factors which may influence the school success of blind children, undoubtedly, would be the most satisfactory method of attacking this problem.

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[28] *Idem.*

[29] Hayes, S. P., *Self-Surveys in Schools for the Blind,* p. 19.

[30] Hayes, S. P., *Preliminary Study of the Influence upon School Success of the Age at Which Vision is Lost,* p. 8.

The School Achievement of Sight-Saving Class Pupils.— One of the major functions of sight-saving classes is to enable children with defective vision to maintain a normal level of school achievement. Leaders in sight-saving class work stress the importance of this factor in the event that pupils may be returned to the regular grades, and in order that there may be equality between partially seeing children and those with normal vision.[31]

Myers[32] found the average promotion rate of 2013 sight-saving class pupils from various cities thoughout the United States to be 87.8 per cent, which compares favorably with a promotion rate of 86.7 per cent for all pupils in the public schools of Philadelphia during 1928. The promotion rate of 155 children in the Chicago sight-saving classes increased 14.8 per cent after their entrance to these classes from the regular grades. From these data it appears that sight-saving pupils generally progress through the school grades at a fairly satisfactory rate, and that these classes are of real significance in lessening academic retardation among partially seeing children.

Despite the above conclusions the problem of over-ageness among sight-saving pupils appears to be quite serious, although less pressing than in schools and classes for the blind. Many children are considerably over age when they enter sight-saving classes and, while a few overcome this initial retardation or remain at the same age-grade level, the majority increase in over-ageness during their residence in sight-saving classes. Thus, Myers found that the percentage of over-ageness decreased in only two cities, Los Angeles and Minneapolis, remained the same in Grand Rapids, and increased in all other cities reporting sight-saving work.[33]

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[31] Lawes, Estella, *Methods of Teaching Sight-Saving Classes,* p. 10.

[32] Myers, Edwart T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* p. 77.

[33] *Idem.*

Furthermore, there were a number of children who were either normal or under age for their respective grades when they entered sight-saving classes, but who became over age while attending them.[34]

Myers presents interesting tabulations[35] showing the relationship of mentality to the increase and decrease of overageness among sight-saving class pupils. There were 90 pupils who were over age when they entered sight-saving classes, but who were either normal or under age at the time of the survey. Of these, 40, or 44.4 per cent, had I.Q.'s above 90, or were rated good or better by teachers. Twelve children in this group, or 13.3 per cent, however, had I.Q.'s below 80 and were rated as poor or deficient by teachers. On the other hand, there were 192 children who were normal or under age at the time they entered sight-saving classes, yet who were over age at the time of the survey. Fifty, or 26 per cent, of these pupils had I. Q.'s above 90, or were rated good or better by teachers. Eighty children, representing 41.6 per cent, however, had I.Q.'s below 80, or were rated poor or deficient by teachers.

As was pointed out in Chapter VIII, there is some doubt as to the accuracy of the intelligence ratings obtained by Myers for sight-saving class pupils. Nevertheless, the above facts concerning the relationship between intelligence and school achievement among partially seeing children are of interest, and indicate that, while some sight-saving classes may be accelerating their pupils more rapidly than their ability warrants, there also are those which are allowing bright children to become retarded unnecessarily. It is impossible, of course, to judge the extent to which different eye conditions influence the academic progress of the two groups of pupils just described. Thus, a comparatively dull child whose eye conditions are static may be able to do more school work than a bright child suffering from myopia, or other progressive ocular troubles. Hence, the dull pupil might possibly be able to make up a certain amount of retardation or remain at the same age-grade level as when he entered the sight-saving class, while the bright pupil would fail to maintain a degree of accomplishment warranted by his intelligence, because of inability to use his vision to any considerable extent. Other factors such as the equipment, supervision, and teaching personnel of sight-saving classes, also, must be taken into account in attempting an explanation of the apparent inconsistency of Myers's data.

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[34] *Myers,* Op. cit., p. 74.

[35] *Ibid.,* pp. 74-76.

It is of interest to note that, while blind children seem to excel in certain school subjects and are poor in others, there appears to be no "best subject" or "worst subject" for sight-saving class pupils as a group. Thus, Myers found that six elementary subjects which were mentioned most frequently by teachers of sight-saving class pupils received an almost equal number of votes as the best and poorest subjects for partially seeing children.[36] As in the case of blind pupils, therefore, a wide variation evidently exists in the aptitudes of sight-saving class children for different branches of the elementary curriculum.

A comprehensive study of the various factors influencing the school success of partially seeing children enrolled in public-school sight-saving classes should be made in order to eliminate, as far as possible, unnecessary retardation of pupils of normal or superior intelligence. The handicap of over-ageness is quite as serious with these children as it is with blind pupils, and every effort should be made to enable the former to maintain a normal age-grade level, without danger to their vision.

Summary.—In 1921 Hayes published a pamphlet containing a number of standardized achievement tests especially adapted for use with blind pupils. Since that time, however, the progress in developing educational measurements which has been made among educators of the seeing has not been reflected proportionately in the education of the blind. Nevertheless, certain additional adaptations of tests have been made.

The problems involved in adapting these tests for use with blind children are very difficult and require much careful investigation. Such questions as: (1) are oral adaptations preferable to those involving the use of Braille; (2) how can the mechanics of Braille best be equated with the ordinary methods employed with seeing children; and (3) how much allowance ought to be made for mechanical errors which may change the meaning of answers, represent some of the broader aspects of this problem which should be studied.

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[36] *Ibid.*, p. 79.

Surveys show that blind children on the average are from one to three years or even more below the school achievement of the seeing, judged according to age standards. There also are wide differences of accomplishment among blind pupils in different school subjects. Many factors may contribute to the retardation of children without sight, e.g., (1) the presence of dull or feeble-minded children in the same classes with the mentally normal or superior; (2) the inherent slowness of the methods of instruction used with blind children; (3) the unwillingness of parents to send children to school at an early age and the consequent delay in beginning their education; (4) faulty pre-school training and prolongation of formal kindergarten instruction; (5) the extent and duration of blindness; (6) administrative difficulties in certain residential schools; and (7) inferior teaching personnel. Existing information indicates that school entrance prior to the age of seven does not materially affect the school success of blind pupils; that the accomplishment of children whose blindness is due to accident is superior to that of congenital cases; and that children retaining some vision do better school work than those totally blind. There also is evidence that the age at which vision is lost has little or no effect upon school success. Slowness of methods might be overcome to some extent through the introduction of short cuts in the early grades. Administrative difficulties and inferior teaching, also, should be remedied.

The serious educational retardation of blind pupils hitherto has not received the attention which it deserves. The overageness of blind children constitutes a serious handicap in addition to their lack of vision. It is important, therefore, that all factors influencing the school achievement of children without sight be investigated carefully with a view to decreasing this retardation.

Data collected by Myers in his survey of public-school sight-saving classes in this country show that the promotion rate of partially seeing children enrolled in these classes compares favorably with that for children with normal vision in the ordinary grades. One hundred and fifty-five children increased their promotion rate 14.8 per cent after entering sight-saving classes. With the exception of three cities, however, all sight-saving classes included in the survey reported an increase in the over-ageness of pupils. The relationship of over-ageness to mentality is, in some respects, contrary to what would be expected. For instance, some children of inferior intelligence made up for over-ageness or remained at age after entering sight-saving classes, while a number of mentally superior children became over age after entering upon a sight-saving program. In this connection, however, the types of ocular defects from which the children were suffering may have had a greater effect upon their school progress than did their mental ability. Over-ageness among sight-saving class pupils is quite as serious as it is among blind children, and every effort should be made to prevent its increase without danger to vision.

CHAPTER X

PERSONALITY PROBLEMS OF VISUALLY HANDICAPPED CHILDREN

Blindness in Relation to Personality Difficulties.—The popular belief that blindness necessarily results in peculiar personality traits constitutes one of the most serious obstacles in the normal adjustment of those without sight. This belief is well illustrated in works of fiction depicting blind characters,[1] as well as in popular newspaper and magazine articles dealing with blind individuals.

The extent to which lack of vision actually causes personality difficulties among children in residential schools is not easy to determine, since few comprehensive studies have been made. It has been stated that since blindness undoubtedly thwarts the expression of many normal desires, it cannot but have an adverse effect upon personality.[2] This probably is true unless other forms of activity can be substituted for those which are blocked as a result of blindness. It has been said, also, that while blindness does not produce a distinct personality type, it does accentuate certain traits such as feelings of inferiority and phantasies.[3]

While blindness may be responsible directly for certain personality difficulties, it seems more reasonable to suppose that the majority of these maladjustments result from the social situations arising from lack of vision rather than from the physical handicap itself. This distinction is important because personality difficulties resulting from environmental factors often can be corrected, while those resulting directly from the physical disability itself probably would be difficult if not impossible to ameliorate. Thus, maladjustments frequently attributed to blindness in reality may be the result of institutional environment or unsatisfactory adjustment with other children. There can be little doubt that institutional life is generally uninspiring and discouraging to personal effort and ambition, and this fact may account in part for the lack of initiative and general apathy of many children in residential schools for the blind.

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[1] Langworthy, Jessica L., "Blindness in Fiction," *Journal of Applied Psychology,* XIV, June, 1930, pp. 269-286.

[2] Stinchfield, Sara M., *The Psychology of Speech,* p. 178.

[3] Fladeland, Sina V., "Some Psychological Effects of Blindness as Indicated by Speech Disorders," *The Journal of Expression,* September, 1930, pp. 129-134.

A thorough study of the personality traits of children without sight was made recently by Muhl[4] at the California School for the Blind. Every pupil received a thorough psychological and psychiatric examination through which a number of interesting facts were discovered. It was found that lack of initiative was the chief characteristic of the children examined, and that this was due not so much to physical causes as to emotional blocking. Feelings of inferiority often accompanied by compensatory mechanisms of bravado, also, were found to be prevalent. Worry from various causes troubled many of the children, but few expressed feelings of resentment at their handicap. A most varied phantasy life of a wish-fulfilling or sadistic nature was discovered. It is interesting to note in regard to phantasies among blind children that a study conducted by Cutsforth[5] produced almost identical results. It seems evident, therefore, that there is a tendency among blind children to seek refuge from reality in phantasies, and thus to compensate for the limitations of blindness.

As a result of her study, Muhl made a number of practical recommendations concerning educational and social adjustments which she hopes to check by means of a future series of examinations. In this way it may be possible to discover the extent to which remediable environmental factors are responsible for personality difficulties among blind children.

According to Gesell[6] the protection of the blind child's personality is the most important phase of his training. Nevertheless, educators of children without sight have done comparatively little in this respect. Personality studies have been conducted but they usually have been regarded as pieces of interesting information having no direct bearing upon the school life of pupils. Obviously, there is little use in having competent psychological and psychiatric services in schools for the blind unless their findings are to receive consideration and their recommendations are to be carried into effect. The recent proposal that psychological and psychiatric service be made available to all residential schools for the blind through some central agency[7] is most encouraging, but the mere provision of this service will not solve the personality problems of children without sight. Unless superintendents, principals, and teachers have an intelligent understanding of the work of a psychiatrist or clinical psychologist and are willing to coöperate with him, the results obtained will hardly justify the expense involved.

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[4] Muhl, Anita M., "Results of Psychometric and Personality Studies of Blind Children at the California State School for the Blind," *A. A. I. B. Proceedings,* 1930, pp. 568-573.

[5] Cutsforth, Thomas D., *A Preliminary Study of the Phantasy Life of the Blind,* 1929 (unpublished).

[6] Gesell, Arnold, *The Pre-School Child,* Houghton Mifflin Company, Boston, Massachusetts, 1923, p. 107.

There are no data available concerning the incidence of personality difficulties among blind children in day-school classes. Since the social situation is generally more normal, however, it may be inferred that those types of personality disturbances which are traceable directly to an institutional environment are not so frequent among pupils in these classes. As mentioned in Chapter V, nevertheless, there often is a danger that the adjustment of blind children among those who see is not entirely satisfactory, and that the former may develop feelings of inferiority resulting in undesirable personality traits. One of the principal advantages of day-school classes is the stimulus to individual effort which they provide through competition with seeing children, thus preventing to a great extent the listlessness and lack of initiative which appear to characterize many pupils in residential schools. It should not be thought, however, that the placement of blind children in day-school classes automatically solves their personality problems, for such is very far from being the case. It undoubtedly does offer better opportunities for normal social development than does attendance at a residential institution, but it is no guarantee that maladjustments will not arise.

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[7] "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection,* p. 298.

Since social acceptability is so valuable an asset to a blind individual, it is the obvious duty of agencies concerned with the instruction of blind children to remove all personality handicaps which will respond to treatment, and to eliminate, in so far as possible, conditions which produce these difficulties. If the blind adult is to be socially competent, his early training must be so directed as to develop his personality in a normal manner.[8]

There is great need for additional investigations similar to those of Muhl in order to determine just what factors are most significant in regard to the personality development of blind children. Intensive studies in numerous residential schools and day-school classes should be made and the recommendations of the examiners put into effect over a sufficiently long period of time to permit checking by means of another survey. In this way it could be ascertained eventually which types of personality difficulties could be corrected and the kind of treatment needed. This particular field offers many interesting opportunities for clinical psychologists and psychiatrists, and educators of blind children should endeavor to secure their services so that blind pupils may leave school without the additional handicap of undesirable personality traits.

"Blindisms" as a Problem.—One of the most difficult personality problems among children without sight is the presence of certain tics and habit spasms which have become so closely associated with lack of vision that they are known generally as "blindisms." The more common of these mannerisms are: (1) rocking the body backward and forward; (2) putting fingers or fists into eyes; (3) twirling rapidly round and round; (4) shaking fingers before the face; and (5) holding head bent forward. It should not be inferred that *all* blind children exhibit "blindisms," since many are quite free from these peculiarities. In numerous instances, however, particularly among the congenitally blind, one or more "blindisms" may be observed and since their presence strengthens the

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[8] Wallin, J. E. W., *The Education of Handicapped Children,* Houghton Mifflin Company, Boston, Massachusetts, 1924, p. 121.

popular belief that those without sight are abnormal, everything possible should be done to prevent their development.

Although many reasons for the existence of "blindisms" have been suggested, little seems to be known as to their actual cause. One of the most widely accepted theories is that these habits are a substitute for natural physical activity which is thwarted by blindness.[9, 10] Whether or not this is the correct explanation, it undoubtedly is true that many young blind children are prevented from engaging in normal bodily exercise. If "blindisms" duplicate the pleasurable experience which ordinarily accompanies physical activity, they probably are a substitution mechanism. They may begin simply as random movements and by producing feelings of satisfaction become well-established habits.

Certain mannerisms, such as putting fingers in the eyes and holding the head forward may have their origin in ocular irritation.[11] For example, the child may develop the habit of putting his hands to his eyes when they pain him, and this mannerism often persists after the ocular condition is cured. The principle operating in this instance probably is similar to that obtaining in Olson's experiments with rats.[12] He found that habit spasms induced by irritating the rat's ears continued after the irritation had disappeared. The fact that many eye conditions make it extremely painful to face strong light may account in part for the tendency among some blind children to bend the head forward. Occasionally in progressive cases total blindness may ensue, but the head-bending habit may continue throughout the remainder of the child's life.

In his study of the tics of seeing children Olson found that habit spasms were much more numerous among those of poor nutritional status than among those who were well nourished.[13] This points to the possibility that the diet of certain

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[9] Burritt, O. H., *New Opportunities for Blind Children Before Entering School,* reprint of a paper given before the First International Congress of Mothers on the Welfare of the Child, Washington, D. C., March, 1908, p. 7.

[10] Ritchie, J. M., *Concerning the Blind,* p. 188.

[11] Lewis, F. Park, "The Blind Child," *Outlook for the Blind,* X, Spring, 1916, p. 7.

[12] Olson, Willard C., *The Measurment of Nervous Habits in Normal Children,* University of Minnesota Press, Minneapolis, Minnesota, 1929, p. 90.

[13] *Ibid.,* p. 54.

schools for the blind may be responsible to some extent for the presence of mannerisms among their pupils. Olson also concludes that the imitative factor is of importance in connection with tics among seeing children. It does not seem probable that imitation is responsible for "blindisms" to any appreciable degree since the majority of the habits must be "seen," in order to be imitated. It may be possible, however, that children with considerable vision may notice the mannerisms of other blind children sufficiently to copy them, but this does not seem likely in most cases. A thorough study of the tics of blind children should be made following the technique employed by Olson. Groups of pupils without sight should be observed carefully and the number and frequency of "blindisms" among them noted. All other factors which are associated with the presence of mannerisms should be studied in an effort to determine if any of them are causative in nature, and, if so, how best they may be eliminated. It is claimed that unless mannerisms are overcome in early childhood, they persist throughout the life of the individual.[14] It is of great importance, therefore, that pre-school and kindergarten children should be examined with respect to this problem and that an effort be made to prevent the development of mannerisms at the outset, rather than to allow them to become habitual and then attempt to cure them. Punishments, tying of hands, and similar procedures usually do little good and may harm the child's personality in other ways. The aim should be rather to study "blindisms" objectively and to eliminate or improve conditions which seem to contribute to their origin and persistence. Many teachers of the blind have emphasized the necessity of preventing mannerisms, but thus far no one has attempted to get at the root of the trouble through systematic study and observation.

Sex Problems Among Blind Children.—Psychiatrists and clinical psychologists generally recognize the fact that unfortunate attitudes toward sex are responsible for many of the personality difficulties of both children and adults.[15] These attitudes usually can be traced to inadequate sex instruction, and it is advocated, therefore, that children be taught the facts concerning human reproduction as soon as they are old enough to understand and appreciate them. It is pointed out that the child will acquire sex knowledge somehow and that it is much better for his present welfare and for his future happiness to have it presented to him correctly than to gain all sorts of false impressions and perverted ideas from other children. If all this is true for seeing children in a normal social environment it is even more the case with blind pupils in a residential institution whose atmosphere frequently is far from conducive to the development of normal ideas concerning sex. Nevertheless, educators of the blind appear to have dealt less effectively with this important problem than with any other in the training of children without sight, perhaps because it is regarded customarily as a subject which cannot be discussed frankly.

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[14] Brain, W. R., "The Treatment of Tic," *Lancet,* CCXIV, June, 1928, pp. 1295-1296.

[15] Thom, Douglas A., *Everyday Problems of the Everyday Child,* D. Appleton and Company, New York, 1928, p. 262.

The general opinion among educators of the seeing seems to be that sex instruction should be given by the child's parents in the home and that the school should only supplement this through its courses in biology, physiology, and hygiene. It is admitted, however, that where homes cannot cope with this problem the school must shoulder the responsibility. Since residential schools for the blind are in complete control of the environment of their pupils, it obviously becomes their duty to instruct them in matters relating to sex[16] and to strive in every way to create a normal attitude toward it. The necessity for strict segregation of the sexes in these institutions has an unfortunate tendency to emphasize sex more than is the case among boys and girls who mingle freely in an ordinary home and school environment. It is questionable, perhaps, whether segregation need be carried to the point where blind girls and boys occupy separate classrooms in different school buildings. In fact many schools have found no harm resulting from instructing both sexes in the same room where they always are under the surveillance of the teachers.

Although Haüy is said to have encouraged the intermarriage of blind individuals[17] it is now believed that the union of two handicapped persons is undesirable sociologically. Those schools for the blind which insist upon complete segregation, therefore, usually do so because of the idea that in this way they are lessening the chances of later marriages between the pupils. The fact remains, however, that such matings continue to occur and it is perhaps questionable whether or not the undue emphasis upon separation of the sexes does not defeat its own ends by arousing an interest which probably would not exist under normal circumstances.

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[16] Burritt, O. H., "Sex Education," *A. A. I. B. Proceedings,* 1926, p. 329.

[17] French, R. S., *From Homer to Helen Keller,* p. 93.

The problem of masturbation among pupils in schools for the blind appears to have been present from comparatively early times. The following quotation which illustrates the views of Dr. S. G. Howe also indicates the beliefs concerning the practice held during the latter part of the nineteenth century.[18]

> Indeed, most people will be surprised by the statement which I am about to make, as to the extent of its [masturbation's] prevalence; and some may be incredulous about its pernicious effect upon the general health, and its especial tendency to impair the mental faculties, thereby causing feebleness of mind, imbecility, and insanity. But its victims are everywhere, even among apparently healthy people. Keen physicians find them to abound among their patients; and specialists, in the treatment of nervous and mental diseases, see the incipient effects of this vice in the nervousness, feebleness, whims, and fancies of their patients; and they know that hundreds whose cases are worse, drag out wretched lives in Asylums for Lunatics.
>
> It is my belief that from half to two thirds of the blind, and of the idiots, contract this habit between the sixth and the sixteenth years of their age, and practise it to a damaging extent; and that from one third to one half of ordinary youth do the same.

While it is agreed generally that masturbation is an undesirable habit which should be broken up if possible, no such dire results as those pictured by Howe accrue from the practice.[19] In fact, it has been stated that masturbation between the tenth and fourteenth years is so common that it "probably is normal."[20]

The most serious harm to the child's personality from the practice of masturbation is the attitude which parents and teachers adopt toward him, making him feel that he is a social outcast. This sense of inferiority may have a pronounced ill effect upon the child's mental condition, especially if the habit persists despite the warnings of adults.

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[18] Howe, S. G., "Counsels to Parents of Blind Children," p. 25.

[19] Stern, A., "Masturbation: its Rôle in the Neuroses," *American Journal of Psychiatry,* IX, May, 1929, pp. 1081-1092.

[20] Thom, Douglas A., Op. cit., p. 272.

The true cure for the habit lies not in attempting to frighten the child out of it, but rather in substituting other forms of activity. It also is necessary for adults to recognize that a certain amount of masturbation among younger children is not to be regarded as abnormal and calling for drastic treatment. It frequently is possible to appeal directly to older children of good intelligence who have contracted the habit, pointing out to them its undesirable features.

It seems questionable whether or not masturbation is more prevalent among blind than among seeing children. Institutional life with its common dormitories may make it easier for the habit to spread from one child to another, but this is the result of unavoidable environmental conditions rather than of lack of vision. The fact that masturbation frequently is practised by children as an escape from reality[21] may, perhaps, have some bearing upon its prevalence among the blind. As pointed out previously, the phantasy life of blind children is very extensive, and phantasies, obviously, are mechanisms for escaping from existing conditions. It cannot be stated arbitrarily, however, that the presence of a rich phantasy life among blind children indicates that they are especially prone to masturbation, but the relationship between the two phenomena should be investigated.

The academic retardation of most blind children probably adds somewhat to the seriousness of sex problems among them since they become pubescent while still in the elementary grades. It is not to be supposed, however, that no sex instruction is needed prior to the age of adolescence nor that interest in sex is not awakened until that time. This belief among teachers of blind children has resulted in the development of many problems which otherwise might have been avoided. It is true that the onset of puberty brings added interest in sex matters, and it is, therefore, of the greatest importance that

[21] *Ibid.*, p. 280.

adolescent children be given simple, truthful information when they desire it.

It has been said that the ignorance of many teachers regarding matters that concern sex constitutes one of the greatest drawbacks to giving adequate sex instruction in schools for the blind.[22] Obviously, if pupils are to receive such instruction, teachers and matrons must have not only a command of the facts but, also, a normal attitude toward them. It should not be thought that sex instruction is being neglected only in schools for the blind. Many seeing children also are brought up in ignorance and allowed to discover their information as best they may. It cannot be denied, however, that the environment of an institution tends to create special problems among blind children in this respect. It is, therefore, the duty of superintendents, teachers, and matrons to protect the blind child's personality by preventing conflicts due to sex impulses through kindly, sympathetic instruction. When this fact is realized generally, it is probable that many of the existing personality difficulties among blind children will disappear.

Speech Disorders of Blind Children.—From available data it appears that speech disorders are far more prevalent among blind children than among those with vision. In surveys of two large eastern institutions for the blind Stinchfield[23] found that 48 per cent of the pupils exhibited major speech defects. These results indicate the need for systematic training in corrective speech as an essential phase of the education of children without sight but, up to the present time, only three schools have initiated this work.[24]

The extent to which blindness *per se* is responsible for speech defects is somewhat difficult to determine. It seems probable that, as in the case of other personality difficulties, speech disorders are caused more frequently from conditions arising from lack of vision than from blindness itself. Thus, the tendency among many parents to regard their blind children as babies much longer than is the case with their seeing children may be directly responsible for the presence of speech defects, such as lisping and baby talk. It may happen, also, that brain tumors and diseases of the central nervous system which cause blindness may produce speech defects through paralysis of certain parts of the vocal and articulatory apparatus.

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[22] Burritt, O. H., "Platform of Principles for the Education of the Blind," *A. A. I. B. Proceedings,* 1924, p. 216.

[23] Stinchfield, Sara M., Op. cit., p. 309.

[24] Fladeland, Sina V., "Speech Defects of Blind Children," *The Teachers Forum,* November, 1930, p. 6.

Stuttering and stammering often are caused by emotional disturbances and mental conflicts which have to be eliminated before these defects can be remedied. It is possible that the conditions resulting from blindness are more productive of these emotional disturbances than are the conditions surrounding the majority of seeing children. For example, Muhl[25] found that worry was a predominant feature of the emotional life of the blind children whom she examined, and other writers point out that the thwarting of normal impulses by the physical handicap of blindness may have serious emotional consequences.

Probably the most serious feature of speech defects, however, is their unwholesome effect upon personality. If their origin is in emotional conflict and this disturbance is not removed, it will be aggravated by the presence of the speech defect, and serious harm to the child's personality may result. On the other hand, if the speech disorders are caused by faulty pre-school environment or disease, their existence may produce feelings of inferiority and fear complexes which may prove very detrimental to normal personality development.[26]

Speech defects, also, add to the difficulty experienced by most blind individuals in making normal social adjustments, and since economic success depends largely upon social efficiency, the importance of eliminating all defects, in so far as possible, cannot be overemphasized. It is essential, also, that the blind child's personality be protected from the emotional disturbances and unhappiness resulting from fear and inferiority complexes induced by removable defects. Obviously, all speech disorders cannot be cured, but many can be improved, or the child can be led to adopt a more wholesome attitude toward his difficulty.

[25] Muhl, Anita M., Op. cit., p. 569.

[26] Fladeland, Sina V., "Speech Defects of Blind Children," *The Teachers Forum,* November, 1930, p. 8.

There is need for an intensive study of the speech disorders of blind children in relation to personality difficulties. It is not known definitely, for example, to what extent the maladjustments which appear to be most prevalent among pupils in schools for the blind are responsible for speech defects. The tendency for speech disorders not directly caused by emotional disturbances to create personality problems also requires investigation. In short, the interaction of speech disorders and personality difficulties among children without sight should be subjected to careful and thorough research with a view to discovering means and methods for eliminating or decreasing both types of handicap. If the findings thus far reported are true for blind children generally, viz., that nearly one half of all pupils enrolled in residential institutions are suffering from speech defects, it is absolutely essential that every institution make some provision for corrective speech training. No amount of education which the schools can give will make the blind child socially competent if he is allowed to retain handicaps which detract materially from his chances of normal adjustment.

Personality Difficulties of Partially Seeing Children.—There can be little doubt that the presence of uncorrected visual defects among school children may result in serious personality difficulties.[27] Constant eye strain causes undue nervous tension, and repeated failure not because of mental inadequacy but because of defective vision ultimately brings a sense of futility and a feeling of inferiority which are productive of various maladjustments.[28] The seriousness of these problems is illustrated in an account of a delinquent boy who, when brought before the juvenile court, proved to have vision so defective that it had been quite impossible for him to maintain a level of school achievement comparable with his age and intelligence. His repeated failures and the feeling that he had been treated unjustly caused him to develop a grudge against society of which his delinquencies were the out-growth.[29] If proper recognition and treatment of this defect had been afforded at the outset, these difficulties might have been avoided.

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[27] "The Partially Seeing," *Special Education; The Handicapped and the Gifted,* pp. 212-213.

[28] Burnham, William H., *The Normal Mind,* D. Appleton and Company, New York, 1926, pp. 451-485.

Although cases of actual delinquency as a result of visual defects may be comparatively rare, there is reason to believe that many children either are finding it very difficult to keep up with the regular school work or are failing solely because of visual handicaps. Many of these can be corrected so that the child can carry on his studies successfully in the ordinary grades. Where this is not possible, however, the sight-saving class provides a means whereby these children may receive instruction especially adapted to their needs. The mental-hygiene aspects of sight-saving work probably have received less attention than they merit, although they constitute a most important phase of the program. Removing children with defective vision from unfair competition with those possessing normal sight and placing the former in an environment which promotes a maximum of successes and a minimum of failures[30] is indeed a valuable service in promoting normal social attitudes among these pupils.

There is no information available concerning the incidence of personality problems among children enrolled in sight-saving classes. It seems probable, however, that in the majority of instances the pupils are fairly well adjusted and that no particular difficulties arise. As indicated in a previous chapter, however, the social adjustment between partially seeing and physically normal pupils is not always as satisfactory as might be desired. This may result occasionally in emotional difficulties among the former group, but with the coöperation and assistance of teachers this probably is not often the case.

It would be interesting and helpful to study the personality difficulties of a large number of partially seeing children before their entrance to sight-saving classes and to continue the study over a period of years, after their enrolment in these classes, in order to ascertain the extent to which these problems decreased or new ones arose. The fact that sight-saving classes undoubtedly are successful in preventing serious behavior problems among partially seeing children should not lead workers in this field to believe that there is no occasion to guard the child's personality after he is admitted to a sight-saving class. Such questions as the prevalence of tics and mannerisms, sex habits, and speech disorders among partially seeing children are unanswered as yet, and investigations of these problems doubtless would yield interesting and valuable results.

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[29] Hathaway, Winifred, "Conservation of Vision Classes In the Public Schools," *A. A. I. B. Proceedings,* 1920, pp. 34-37.

[30] Burnham, William H., Op. cit., p. 458.

Summary.—The extent to which blindness is responsible for personality difficulties among children without sight is not easy to determine. The probability is, however, that maladjustments are more often the result of social conditions arising from lack of vision than of the handicap itself. Although the protection of the blind child's personality is a most important phase of his training, this problem has received comparatively little attention. A study conducted by Muhl at the California School for the Blind revealed the following facts: (1) pupils lacked initiative, their apathy being due to emotional blocking rather than to physical causes; (2) a most varied phantasy life existed among the majority of the children; (3) feelings of inferiority were common, being accompanied frequently by compensatory mechanisms of bravado, and (4) few children expressed feelings of resentment at their handicap. Educators of blind children undoubtedly should seek to enlist the services of competent psychiatrists and clinical psychologists and should coöperate with these specialists so that all remediable personality handicaps existing among pupils in schools for the blind may be removed.

Certain tics and mannerisms have become so closely associated with lack of vision that they are known as "blindisms." Among the more common of these habits are: (1) rocking the body backward and forward; (2) putting fingers into the eyes; (3) twirling rapidly round and round; (4) shaking fingers before the face, and (5) bending the head forward. The cause of these mannerisms is not known definitely, but the most widely accepted theory is that they are a substitute for normal physical activity which has been thwarted by blindness.

It also has been suggested that such habits as putting fingers into eyes and bending head forward may be the result of ocular irritation. The principle of this hypothesis is borne out by Olson's experiments with rats. Olson found, also, that nervous habits among seeing children are associated with poor nutritional status. This points to the possibility that the diet in some residential schools for the blind may be responsible in some measure for the presence of "blindisms" among the pupils. A thorough study of the mannerisms of blind children should be made in order to determine their causes and to eliminate them as early as possible, since their persistence into later life generally renders them incurable.

The problem of adequate sex instruction is of even greater importance among blind than among seeing children, since institutional environment probably is not conducive to the development of normal attitudes toward sex. Nevertheless, educators of blind children have dealt with this problem less effectively than with any other connected with the training of children without sight. While segregation of the sexes is necessary in residential schools, it is doubtful if it need be carried to the point of having boys and girls occupy separate classrooms. While it is agreed that masturbation is a habit which should be broken up, its presence among younger children is sufficiently common as to be considered normal. Contrary to old beliefs the principal harm resulting from masturbation is the attitude taken toward it by parents and teachers, making the child feel that he is a social outcast. The cure for the habit lies not in attempting to frighten the child out of it, but rather in substituting other forms of activity. One of the principal drawbacks to the giving of sex instruction in schools for the blind is the ignorance of teachers and matrons concerning matters relating to sex. Nevertheless, if blind pupils are to avoid personality difficulties due to inadequate sex knowledge, the school must supply the necessary instruction, since it controls their living conditions during the greater part of the year.

Surveys of two large eastern institutions for the blind showed that nearly half of the pupils were suffering from major speech defects. If this is true of blind children generally, the incidence of speech disorders among them is much more common than is the case among seeing children. Up to the present time, however, only three schools have initiated systematic training in corrective speech as a part of their regular program. It is possible that unfortunate pre-school conditions and diseases causing blindness may account in part for the prevalence of speech defects among children without sight. Emotional disturbances, also, may be a contributing factor, and these maladjustments may occur more frequently among pupils in schools for the blind than among seeing children in a normal environment. Unless speech defects are corrected or children are led to adopt a more wholesome attitude toward them, serious harm to their personalities may result. It is important, therefore, that all schools should have corrective speech work in order to remove the additional handicap of speech defects and consequent personality disturbances.

The presence of serious visual defects among children in the public schools may render it impossible for them to do academic work comparable with their age and intelligence. Repeated failure because of this physical disability eventually produces a sense of futility and a feeling of inferiority which may be very harmful to the child's personality. It frequently is possible to correct visual defects so that pupils may continue their work successfully in the ordinary grades. Where this is impossible, however, the sight-saving class offers an opportunity for the partially seeing child to receive instruction adapted to his needs. The mental-hygiene aspects of sight-saving classes should not be ignored, for they undoubtedly provide a means for eliminating personality difficulties by substituting successes for failures. Although it is probable that maladjustments are less frequent among sight-saving class pupils than among blind children, a thorough study of this problem should be made.

CHAPTER XI

GUIDANCE PROBLEMS AMONG VISUALLY HANDICAPPED CHILDREN

The Need for Organized Guidance in Schools for the Blind.—Although the guidance movement has been an outstanding feature of education for seeing children during recent years, it appears to have had comparatively little influence upon educators of the blind. Some attention has been given to guidance in connection with the vocational training of blind pupils, but these attempts have been somewhat sporadic and not well organized. The fact that there are very few occupations open to the blind[1] and that the majority of these involve only simple manual processes has stimulated the belief that guidance is unnecessary. Furthermore, a few schools for the blind hold that their function is to supply cultural education rather than vocational training, and since it is believed that guidance belongs to the latter category, they refuse to have anything to do with it. The concept of guidance as individual pupil adjustment throughout the entire school period rather than as the giving of advice as to the choice of an occupation after the completion of the traditional school course, has not been grasped by those in charge of the education of blind children. A system of organized guidance, therefore, such as may be found in some of the more progressive public schools does not exist in schools for those without sight.

It seems obvious that if normal children require assistance in making the best of their abilities, children with so serious a handicap as blindness need it even more. Since the present discussion is concerned primarily with elementary education, it is beyond the scope of this chapter to deal with the strictly vocational aspects of guidance. It should be pointed out, however, that despite the limited choice of occupations open to blind pupils many attempt to enter vocations for which they are unfitted both by native ability and type of training. Some pursue courses of higher education with no definite aim in view, or aspire to professions the duties and difficulties of which they do not understand. Obviously, careful and sympathetic guidance would be of assistance in remedying such mistakes. Furthermore, the number of vocations open to the blind is small partly because many schools continue to cling tenaciously to traditional occupations such as chair-caning and basket-making, which have long outworn their economic usefulness.[2] An efficient guidance program would seek to introduce new vocations by making use of the general shop principle to try out various industrial processes in which vision is not absolutely essential.[3]

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[1] Maxfield, K. E., "Vocational Preparation and Placement of Visually Handicapped Children," *The Teachers Forum,* III, May, 1931, pp. 7-8.

The difficulty is, however, that a vocational-guidance program cannot accomplish its best results unless it is based upon an efficient system of guidance in the elementary school. There is no particular point in the school program where guidance should be introduced, despite the general belief among educators of the blind that none is necessary until the eighth grade. Vocational selection should be merely one phase of a complete system of organized guidance which has, as its ultimate goal, not the production of certain types of professional or industrial workers, but of good citizens. Blind children have as much right to an opportunity for the development of desirable social habits and attitudes as do seeing children, and since organized guidance assists in the promotion of good citizenship, it undoubtedly has a place in the education of the blind.

Guidance workers in schools for the seeing admit that the present status of organized guidance in elementary schools is somewhat chaotic and not well coördinated. The special committee appointed by the National Vocational Guidance Association to outline the organization and functions of guidance in the elementary school[4] has provided material upon which a guidance program in schools for the blind can be based. As is the case in schools for the seeing, a certain amount of guidance always has been done in schools for the blind. The difficulty is that efforts have not been properly coördinated and teachers frequently have worked at cross-purposes. Organized guidance seeks to bring the pupil into more harmonious relationship with his school environment by studying him as an individual, discovering his special interests and aptitudes, and making his life a "well-planned series of successes" rather than "a disordered series of failures."[5] It seeks to capitalize his assets, to minimize his liabilities, and to promote a better and more sympathetic understanding between him and his teachers.

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[2] Campbell, Edward K., "A Vocational Guidance Course for the Blind," *Outlook for the Blind,* XXI, June, 1927, p. 31.

[3] Dresden, William F., "Adjustment of Graduates of Residential Schools to Industrial Life," *A. A. W. B. Proceedings,* 1927, p. 41.

[4] Allen, Harris C., Chairman of Special Committee, "The Functions of Guidance in the Elementary Schools (Grades 1-6) and the Organization Necessary for Efficient Service," *The Vocational Guidance Magazine,* VIII, February, 1930, pp. 219-223.

Organizing Guidance in the Elementary Grades.—The first and perhaps most important step in the organization of a guidance program in the elementary grades is to select a person with the necessary training and experience to take charge of the work. Unless guidance functions are thus coördinated under the supervision of some one who is definitely responsible for what is to be done, little is likely to be accomplished. In schools for the blind where the enrolment is small the duties of a guidance director might be combined with those of a psychological examiner or elementary supervisor, provided that the person selected could perform both these functions adequately, and that one would not have to be neglected at the expense of the other.

Guidance in the elementary department of a residential school for the blind may be discussed under the three heads outlined by the committee on guidance in the elementary seeing schools: (1) personnel records and reports, (2) counseling, and (3) group guidance.

Although twenty-eight residential schools for blind children have provisions for psychological testing,[6] few, if any, use the data thus obtained for purposes other than refusing admittance to or dismissing feeble-minded pupils. Four schools have special classes for very backward children,[7] but within the so-called normal group practically no use is made of intelligence ratings for guidance purposes. It is not intended to imply that guidance should be based upon the results of intelligence tests alone, for any such procedure would, in many instances, be grossly unfair. Nevertheless, the intelligence quotient does form an important part of the picture of each individual pupil and any scheme of effective guidance must take it into consideration.

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[5] *Ibid.*, p. 219.

[6] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection*, p. 5.

Standardized achievement tests adapted for children without sight probably have received even less attention in the majority of schools for the blind than have intelligence tests. It often is difficult, therefore, to ascertain accurately the achievement level of individual pupils, since there is so great a variation in the marking systems of different teachers. Here again it should be remembered that tests are not infallible and supplementary data always should be sought. In general, however, it may be said that standardized achievement tests give a fairer estimate of individual and group accomplishment than do teachers' judgments alone.

The discovery of special abilities and disabilities among children is another important function of the guidance program. Blind children need to capitalize upon special abilities even more than do the seeing, and it is most important, therefore, that these should be discovered as early as possible. Care should be taken, also, not to have blind pupils waste time in the pursuit of special subjects for which they have no talent. An outstanding example of this in many schools for the blind is the over-emphasis placed upon musical instruction. Although the belief that individuals without sight are generally superior to the seeing in musical talent has been abandoned generally, the curricula of many schools are very heavily weighted with music. The vocational value of music for the blind has depreciated greatly during recent years because of the popularity of the phonograph and radio, and while amateur performance may be a social asset and a source of pleasure to those without sight, it seems questionable if this is of sufficient importance to warrant the neglect of other work, especially in view of the general academic retardation of blind pupils. Meyer reports that the aims in teaching music in a number of schools for the blind are vague and indefinite and in many instances conflicting.[8]

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[7] *Ibid.*, p. 28.

The writer's experiments with the Seashore Musical Talent Tests upon forty-eight blind pupils showed that while the median attainment of the group was higher than that which would be expected from an unselected group of seeing individuals, the scores of a significant number were very low.[9, 10] Since Seashore's tests, with the possible exception of Consonance, are considered fairly valid and reliable,[11] these findings indicate that the indiscriminate teaching of music to all blind pupils results in considerable waste of time and energy. It should be remembered, however, that these tests measure native musical capacities only, and, therefore, do not take into account such important factors as manual dexterity and personality. Suggestions recently have been made for the adaptation of other standardized tests of musical capacity and achievement for use with blind children,[12] and it is to be hoped that these may assist in a better classification of pupils for musical instruction.

Individual aptitudes, also, should be considered in teaching manual training and other allied subjects. Manual skills are most desirable for blind children, but they are individual capacities and their development through formal training beyond a certain point is doubtful. It would seem unwise,

[8] Meyer, George F., "The Responsibility of the School for Vocational Guidance and Placement," *A. A. I. B. Proceedings,* 1930, pp. 507-508.

[9] Merry, Ralph V., "Adapting the Seashore Musical Talent Tests for Use with Blind Pupils," *The Teachers Forum,* March, 1931, pp. 15-19.

[10] Consult also: Trafton, Helen R., "Additional Records Made by Blind Students on the Seashore Tests," *The Teachers Forum,* IV, May, 1932, pp. 92-93.

[11] Ruch and Stoddard, as quoted by Kelley, give the following reliabilities for the Seashore Tests: Pitch .70; Intensity .66; Time .53; Consonance .35; Memory .66 (based upon 100 cases); Rhythm .50 (based upon 50 cases). Consult: Kelley, Truman Lee, *Interpretation of Educational Measurements,* World Book Company, Yonkers-on-Hudson, New York, 1927, pp 341-342.

[12] Kappes, Marion, "Measures of Musical Talent," *The Teachers Forum,* September, 1931, pp. 2-7.

therefore, to require all children to spend much time on the traditional manual subjects irrespective of their special aptitudes in this field.

In securing a complete report of each individual pupil it is essential to have a suitable card upon which test results, teachers' judgments, special abilities, etc., can be recorded. This card should be so arranged that a cumulative record of the pupil's progress can be kept, and a picture of his school development over a period of years thus obtained. Many such cumulative record cards have been devised for use in the regular public schools, and an adaptation of these to the needs of blind children was designed for use in the Lower School of Perkins Institution by Dr. Frieda Kiefer Merry. This record comprises three sheets with items arranged at the top of each page in order to economize time in locating data. The first page contains facts classified under the headings of general information, physical condition, intelligence ratings, and special abilities. The second sheet lists desirable social traits and attitudes, also work habits, while the last page is a record of school achievement. The principal features of this card are: (1) that it presents essential information in condensed form, and (2) that improvement in social attitudes and school accomplishment is noted in terms of progress made rather than according to any arbitrary numerical marking system. These cards are most important, since they not only show the course which guidance should follow regarding each individual pupil, but they also indicate the results of the guidance program, and are a check upon its efficiency.

Teachers in residential schools for the blind are in a much better position to render effective service as counsellors than are ordinary public-school teachers. The former come into much closer contact with their pupils and generally have them in their classes for a number of years. Thus, the counselling problem in schools for the blind should be comparatively easy to solve. As a matter of fact, good teachers of blind children have always acted as counsellors, but they have not always known how to go about it. Under competent supervision and with an understanding of each pupil's special problems, the majority of teachers in schools for the blind should be able to give helpful and sympathetic guidance to their pupils in the matter of school difficulties and with regard to individual capacities and ambitions. For example, a child whose major ambition is to become expert on the piano and whose musical ability and manual dexterity are such as to make this impossible, requires skilful counselling on the part of the teacher to persuade him to substitute for the original ambition something more within his reach, without destroying his interest in school work altogether. The alert teacher will find numerous opportunities to guide her pupils, and this may prevent many serious maladjustments.

The development of an effective counselling system among teachers in schools for the blind is one of the major contributions which can be made by a program of organized guidance. With unparalleled opportunities in this branch of the guidance field, schools for the blind should be able to set an example to those for seeing children in the harmonious relationships which can be established between teacher and pupil as well as in the effectiveness of wise and sympathetic counselling.

The case conference as an instrument for group guidance recently has attained considerable popularity, and its use both in elementary and secondary grades has received the enthusiastic endorsement of guidance directors in public-school systems. The method involves "group discussion in the classroom of concrete problems common to the everyday experiences of all children, focusing attention upon social attitudes."[13] The teacher acts as a conference leader and may guide the discussion by preventing it from wandering too far afield, but in no case should she express her own opinion or try to make the children reach a conclusion in accordance with her individual point of view. It is comparatively unimportant whether or not the group as a whole arrives at a definite conclusion concerning the problem under discussion, since the principal value of the method lies in stimulating independent thinking concerning social values.

[13] Merry, Frieda Kiefer, "Promoting Good Citizenship Among Blind Children Through the Problem-Conference Method," Part I, *The Teachers Forum,* January, 1932, pp. 58-60; Part II, March, 1932, pp. 75-78.

The case-conference technique has been adapted tentatively for use with blind children in the elementary grades, and although it has thus far been given only a limited trial in schools for the blind, the results obtained seem to indicate that the method can be employed very satisfactorily. Ten problems designed especially to include situations common to the experience of most blind children have been prepared, and suggested questions for discussion appended. Teachers are urged to formulate other problems along similar lines and to adapt those given to their own particular needs if necessary. In general, slightly more emphasis has been placed upon the mental-hygiene aspects of the case-conference technique in its adaptation for those without sight than is true of the material used with seeing children. The following is a typical case-conference problem for blind pupils in the elementary grades with suggested questions for discussion.

CHARLIE'S DINNER

Charlie never thought it was worth while to be careful about his table manners. The matron tried to tell him how important it is to eat properly (especially for blind people), but Charlie didn't pay any attention to her.

One day Charlie's Sunday School teacher invited him to her house for dinner. He was very eager to go.

At the dinner table Charlie dropped some potato on the carpet and spilled his cocoa on the table cloth. He felt very much ashamed and didn't enjoy the rest of his visit. He wished then that he had tried to learn better table manners.

1. Is Charlie likely to receive another invitation to his Sunday School teacher's house? Why or why not?
2. Should Charlie's blindness excuse his poor table manners? Why or why not?
3. If Charlie had had some slight table accident, do you think that would be excusable?
4. Is it best to wait until one is grown up to learn table manners?
5. Is it better to ask for help at table rather than risk spilling things? Why or why not?

The fact that lack of vision is a very serious social as well as educational and economic handicap, raises numerous problems of which the foregoing is but a single example. It is essential that blind children begin to think about these problems constructively as soon as possible, and the case conference offers untold possibilities in this field. It should be borne in mind, however, that the case-conference method is not a panacea for all problems arising in connection with the education and socialization of children without sight. Its success or failure depends in large measure upon the individual teacher. If she is willing to take the trouble to study the method carefully and use it as directed, gratifying results probably will be obtained.

The dramatization of biographical incidents involving moral choices[14] offers another possibility for group guidance among blind children.

The radio also should be a most effective instrument in group guidance for blind children. Most schools use radio to some extent, but principally for recreational purposes. Its value as a medium for educational guidance does not seem to be fully appreciated by many of those in charge of the education of blind children and few organized attempts to make use of it are to be found in schools for the blind. Programs dealing with health, fire and accident prevention, music and dramatic appreciation, and various radio clubs illustrate how radio may be used in a guidance program.

The possibilities for organized guidance in schools for the blind are quite as great as are those in schools for the seeing. As with other educational innovations, however, instructors of blind children have been slow to realize its value. With the constant expansion of guidance work in schools for the seeing it is probable that this work will soon become a recognized function of schools for the blind.

Guidance in Sight-Saving Classes.—"From the beginning," says Lawes, "the sight-saving class child must be instructed regarding his own eye condition, and must be guided to think of the things which he may be able to do after he leaves school."[15] Irwin,[16] Coffin and Peck,[17] and other leaders in sight-saving work also emphasize the importance of the guidance function of sight-saving classes. As pointed out in

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[14] Jones, Vernon, *What Would You Have Done?* Ginn and Company, Boston, 1931, 179 pages.

[15] Lawes, Estella, *Methods of Teaching Sight-Saving Classes,* p. 55.

[16] Irwin, R. B., *Sight-Saving Classes in the Public Schools,* p. 16.

[17] Coffin, Helen J., and Peck, Olive S., *Sight Saving Classes, Cleveland Public Schools,* p. 10.

Chapter VI, if sight-saving classes are to fulfil their aim of conserving vision not only while the partially seeing child is in school, but also after he enters ordinary adult life, it is highly essential that he understand clearly his visual limitations and be guided accordingly in the choice of an occupation. Whether or not sight-saving classes should attempt to provide special vocational training is a question which cannot be discussed here. There is no reason, of course, why partially seeing children should not attend ordinary vocational schools to learn trades which do not make too great a demand upon their vision. The danger always exists, however, that unless careful supervision is provided occupations may be chosen which will be injurious to sight.

What has been said in connection with the use of tests and measurements as guidance instruments in the education of blind children applies with equal force to that of the partially seeing. In sight-saving classes, however, academic achievement must be subordinated to ocular welfare. Thus, the ophthalmological record of a sight-saving class pupil is possibly of even greater importance from the standpoint of guidance than are objective ratings of intelligence and achievement. Nevertheless, these should not be entirely neglected, as too often has been the case.

The fact that the sight-saving teacher has a relatively small number of pupils in her class should enable her to do effective counselling and individual guidance work. Generally she is in a better position than anyone else to give sound advice concerning the problems of individual pupils, and if she has their confidence she should be able to influence them in the choice of a suitable life work. The fact that a majority of sight-saving class pupils leave school after completing the elementary grades, makes it doubly important that they acquire habits of ocular hygiene while in a sight-saving class.

It may be somewhat difficult to organize effective group guidance among sight-saving pupils because of the wide range in age-grade level usually found in these classes. If there is a sufficiently large and homogeneous group, however, there seems to be no reason why methods such as the case conference could not be employed satisfactorily. The formulation and discussion or dramatization of special problems peculiar to partially seeing children might prove helpful in emphasizing the necessity for ocular hygiene and the responsibility of each individual for the care and conservation of his vision. As in the case of blind children the radio, also, should be an effective instrument in the guidance of partially seeing pupils.

In a broad sense the entire sight-saving program is one of guidance, since it seeks the adjustment of the individual pupil in terms of his special disabilities, and is recognized as such in the report of the special committee on guidance in the elementary school. It is not enough, however, merely to establish sight-saving classes, although their inauguration is the first and most important step. They should be coördinated with a program of organized guidance, and their pupils should receive the same advantages from this program as do those in the regular grades.[18] If, as is frequently asserted, the handicap of defective vision is greater than all others of a physical nature, then children with impaired sight should be given even more attention than any other handicapped group. Organized guidance, with its emphasis upon individual needs, can do much to increase the effectiveness of sight-saving work in the public schools, provided that mutual understanding and coöperation between those in charge of the guidance program and supervisors and teachers of conservation of vision classes can be maintained.

Summary.—Although organized guidance has been a prominent feature of education for seeing children during recent years, it has received comparatively little attention from educators of the blind. This probably is due in large measure to a misunderstanding of the nature and function of guidance and a tendency to associate it solely with vocational selection and preparation. Obviously, if physically normal individuals require guidance in educational and social adjustment, those with so serious a handicap as blindness need it even more.

The first and most important step in organizing a guidance program is the selection of a competent director under whose supervision the various phases of the work can be coordinated. The three major divisions of a guidance program in an elementary school are: (1) records and reports, (2) counselling, and (3) group guidance. Although standardized tests of intelligence and achievement are employed in a few schools for the blind, their results generally are not used for purposes of guidance. Tests of special aptitudes, such as musical ability, also should prove helpful in the guidance of blind pupils. A cumulative record card should be adopted which will give a complete picture of each child's ability and progress.

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[18] Goehring, Anne K., "The Vocational Guidance Program for Wilbur Wright Junior High School, Dayton, Ohio—Its Application in the Sight-Saving Class," *The Sight-Saving Class Exchange,* Number 38, November, 1931, pp. 4-8.

Teachers in schools for the blind have a unique opportunity to do effective counselling, since their classes generally are small and pupils remain under their supervision during a number of years. Furthermore, a residential school permits teachers to become much better acquainted with children than is the case in ordinary public schools. Good teachers in schools for the blind always have acted as counsellors, but they have not always known how to produce the best results nor have their efforts been coördinated into an efficient guidance program.

The case conference as an instrument for group guidance has been adapted for use with blind pupils and a trial over a period of two years has shown it to be fairly satisfactory. The method involves discussion by the pupils of concrete problems common to their experiences with special reference to social attitudes and values. The teacher acts as a conference leader but should not seek to influence the children to reach a conclusion in accordance with her individual point of view. Dramatization of biographical incidents involving moral choices and the use of radio programs are further methods of group guidance among blind children.

Guidance in sight-saving classes probably is more concerned with the establishment of ocular hygiene than with academic achievement. If the sight-saving program is to be effective, children must be taught to conserve their vision after leaving school. It is important, therefore, that they be guided in the choice of an occupation which will not make too great demands upon their vision. Teachers of sight-saving classes should be able to do effective counselling, and where there are sufficiently large and homogeneous groups of partially seeing children, group guidance methods similar to those suggested for blind children might be employed with success.

CHAPTER XII

PROBLEMS IN SELECTING AND TRAINING TEACHERS OF VISUALLY HANDICAPPED CHILDREN

Qualifications of Teachers of Blind Children.—When the education of blind children first was undertaken in this country, teaching generally had little or no professional status. There were practically no requirements or standards, anyone being free to become a teacher if a position could be found. The opening of the first state normal school[1] at Lexington, Massachusetts, in 1839, through the efforts of Horace Mann, marks the beginning of an attempt to raise teaching to a professional level, to define the qualifications which a good teacher should possess, and to develop a course of training designed to promote efficiency and to prevent waste of time and effort. It is of interest to note that Mary Swift, one of the first pupils of this pioneer normal school, became a teacher at the Perkins Institution for the Blind and took charge of the instruction of Laura Bridgman,[2] the first deaf-blind child to be educated systematically.

For the most part, however, the early schools for the blind were forced to follow current procedure in the choice of teachers, and since practically nothing was known at that time concerning methods of instructing children without sight, teaching them was little more than a process of trial and error. Although a few good teachers may have been developed in this way, it undoubtedly was hard on the pupils and resulted in an enormous waste of time and energy.

Although much still remains to be done to improve the status of teachers of seeing children, considerable progress has been made during the past century. Corresponding advancement, however, has not occurred among teachers of the blind, chiefly because there has been no insistence, by those responsible for the work, upon standards of education or professional preparation. Since the effectiveness of any system of education depends ultimately upon the quality of its teaching personnel, it is, perhaps, not surprising that the education of blind children has lagged behind that of the seeing. Latest reports indicate that only nine residential schools for the blind in the United States require special preparation for their teachers while six encourage it.[3]

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[1] Norton, Arthur O., *First State Normal School in America,* Harvard Documents in the History of Education, I, Harvard University Press, Cambridge, Massachusetts, 1926, p. xiii.

[2] *Ibid,* p. xxxi.

Teachers in public-school classes for children without sight generally have more thorough and extensive professional preparation than do those in residential institutions. While they may not have had special preparation in methods of teaching blind children, they usually are obliged to conform to the requirements of the school system of which their classes form a part. Thus, practically all teachers of Braille classes have three or more years of normal training, which is not true in all residential schools.[4]

The following represent some of the qualifications which experienced educators of the blind believe that ideal teachers in their field should possess:

(1) A four-year high-school course or its equivalent.

(2) For elementary teachers three years of normal training and for high-school teachers four years in normal school or college of education.

(3) For teachers of non-academic subjects three or four years of special training in their particular field. For example, manual-training teachers should spend three to four years in a school of manual arts, while teachers of physical training should spend a like amount of time in a school of physical education.[5]

(4) Special preparation for teaching blind children through courses in the history of the education of the blind,

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[3] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 33.

[4] "The Blind," *Special Education: The Handicapped and the Gifted,* p. 258.

[5] Burritt, O. H., "A Platform of Principles," *A. A. I. B. Proceedings,* 1924, pp. 211-214.

and on the psychological and educational problems of blindness.

In addition to the above qualifications teachers of blind children should possess all those which are considered essential to successful teachers of seeing children. It is acceded generally, also, that, if possible, from two to five years successful teaching experience in ordinary public schools is a valuable prerequisite to the instruction of the blind.[6]

The question as to whether or not blind teachers should be employed to teach blind pupils is one which has aroused considerable discussion. Most residential institutions and a few day-school classes have blind instructors, although these generally are in the minority. On the one hand it has been stated that blind teachers are superior to those who see because they have a better understanding of the problems confronting blind children.[7] On the other hand it is argued that seeing teachers are needed to prevent the development of undesirable habits and mannerisms which would be unnoticed by one without sight, and also that it is more desirable socially for blind pupils to come in daily contact with seeing people. While the care and training of young blind children probably can be handled more efficiently by a seeing teacher, qualification for teaching rather than degree of vision should be the deciding factor in choosing the personnel of a school or class for the blind. In Germany, for example, no distinction is made among candidates for teaching positions in schools for the blind upon the basis of vision alone. If those without sight can fulfil the necessary requirements they are eligible to appointment without further question.[8] This seems to be a fair way of meeting the problem and if it could be followed in this country the employment or non-employment of blind teachers might be settled more impartially. Superintendents of schools for the blind in this country often hesitate to employ blind teachers because it usually is difficult to discharge them if they prove to be inefficient. Higher standards for admission to the field, however, and a more objective attitude in judging the qualifications of applicants might go far toward obviating this difficulty.

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[6] *Idem.*

[7] Villey, Pierre, *La Pédagogie des Aveugles,* pp. 238-244.

[8] This information was obtained (November, 1929) in a personal conference with Dr. Artur Peiser, Director of the State Institution for the Blind at Steglitz, Berlin, Germany.

It has been recommended that seeing teachers of blind children should be required to learn to read Braille tactually in order to gain a clearer understanding of the problems encountered by the pupil without sight.[9] Whether or not the mastery of finger reading by those who see requires "an immense expenditure of nerve force"[10] as one writer believes, it seems somewhat doubtful if it should be listed as a standard requirement for teachers in schools and classes for the blind. A preliminary experiment made by the writer in teaching Braille reading to seeing subjects, indicates that the process is very long and tedious, and that the psychological factors involved appear to be quite different from those which would be expected in the case of a congenitally blind child or one whose vision was lost at an early age. Thus, the subjects read Braille visually much better than tactually at the end of the experiment, although they had been taught solely by the tactual method, and had never seen Braille prior to or during the investigation.[11] Until it can be proved conclusively that the ability to read tactually does assist the seeing teacher in understanding the difficulties of her blind pupils to an extent which warrants the expenditure of the necessary time and energy, it hardly seems justifiable to require this as a necessary qualification.

Training Facilities for Teachers of Blind Children.—The failure of authorities responsible for the education of blind children to insist upon the special professional preparation of teachers has been chiefly responsible for the general lack of adequate training facilities in this field. Within the past decade, however, an attempt has been made to establish special courses on the education of the blind which are intended to provide not only a means for new entrants to the work to become familiar with its problems, but also an opportunity for the improvement of teachers already in service in schools for those without sight.

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[9] Maxfield, K. E., *The Blind Child and His Reading*, pp. 36-37.

[10] Hicks, Minnie E., "Special Qualification and Training Necessary for Teachers of the Blind," *A. A. I. B. Proceedings*, 1916, p. 18.

[11] Merry, Ralph V., "An Experiment in Teaching Tactual Reading to Seeing Subjects," *Journal of Genetic Psychology*, September, 1931, pp. 407-413.

Massachusetts, the pioneer state in the establishment of normal schools, also was the first to organize a systematic course dealing with the educational and social problems of blindness. In 1920, through the coöperation of the Division of the Blind, Massachusetts Department of Education, Perkins Institution and Massachusetts School for the Blind, and Harvard University, an extension course was offered, lectures being given by various specialists in different branches of the field. This innovation proved so successful that it was repeated the following year and in 1926 it was incorporated as a regular half-course in the curriculum of the Graduate School of Education of Harvard University and assigned full graduate credit.[12] Mr. Edward E. Allen, then Director of Perkins Institution, was named lecturer, although he continued to be assisted by other individuals engaged in special phases of the work, such as prevention of blindness, workshops for the blind, pensions, etc. "The course is a general one, aiming to supply knowledge and inspiration for every phase of the subject. . ."[13] It is now known officially as Education N-1 and is offered during the first semester of the university year. It has been given regularly since its inauguration and has every prospect of being continued indefinitely. The majority of the lectures are given at Perkins Institution, and numerous visits to agencies and organizations for the blind are arranged. The Perkins Special Reference Library on blindness and the blind also permits extensive reading on many subjects connected with the education and welfare of those without sight.

In order to extend this work, a more intensive course on methods of teaching blind children was organized in 1926. This is known as the Special Methods Course and is under the leadership of Miss Jessica Langworthy.[14] It is given at the

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[12] Allen, E. E., "The Harvard Course on the Education of the Blind," *Outlook for the Blind,* June, 1925, pp. 8-9.

[13] *Ibid.,* p. 8.

[14] Langworthy, J. L., "Special Methods Class 1926-1927," *Outlook for the Blind,* September, 1927, pp. 56-57.

Perkins Institution and includes lectures, readings, and reports as well as opportunities for observation and practice teaching.

From March 11 to May 27, 1921, a Course of Lectures on the Education, the Training and the Employment of the Blind with Practical Demonstrations was sponsored by the University of Pennsylvania and the Pennsylvania Institution for the Instruction of the Blind.[15] This course has not been repeated, although one dealing with the training of home teachers is now offered regularly under the auspices of the Pennsylvania Institution for the Instruction of the Blind.

In the summer of 1921, the George Peabody College for Teachers, Nashville, Tennessee, in coöperation with the Tennessee State School for the Blind organized a six weeks' course for teachers of the blind. This course was intended to be less theoretical than that given at Perkins Institution, being designed to assist teachers directly in the solution of problems arising in connection with their everyday experience in the classroom.[16] The course was given each summer through 1926, when it was decided to discontinue it until a sufficiently large number of students could be obtained to warrant its reorganization. This was accomplished in the summer of 1931, when the course was resumed under its original auspices with the largest enrolment in its history. Seven instructors offered nine courses upon such topics as Braille shorthand, kindergarten and primary methods, elementary and high-school problems, manual training, physical education, and musical instruction.[17] It has not been announced whether the courses will be given regularly each summer in the future, but this probably will depend upon the demand for them.

A three weeks' summer school, also, was conducted at the Illinois State School for the Blind, Jacksonville, Illinois, during the month of June, 1931. Three courses were given by three instructors and dealt respectively with Psychological and Educational Problems in the Elementary Grades, The Psychology of the Blind as it Relates to Education, and The General Education and Vocational Training of the Blind.[18]

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[15] Burritt, O. H., "Courses on the Education of the Blind," reprinted from the *Eighty-Ninth Annual Report of the Pennsylvania Institution for the Instruction of the Blind,* Overbrook, Philadelphia, 1921, p. 2.

[16] Wampler, I. S., "Training Teachers for Service," *A. A. I. B. Proceedings,* 1924, pp. 221-227.

[17] Wampler, I. S., "George Peabody College for Teachers," *The Teachers Forum,* IV, September, 1931, p. 16.

During 1930-31 the University of California at Los Angeles offered a regular course in the historical and administrative aspects of the education of blind children. It is planned to alternate this course with one dealing with the organization of sight-saving classes and the education of partially seeing children.[19] Thus, courses on both these subjects will be available every two years for individuals interested in this particular branch of special education.

From the foregoing it will be seen that the development of special training facilities for teachers of the blind has received a decided impetus during the past ten years. If these opportunities are to be sustained and new ones provided, however, boards of control and superintendents of all schools for the blind must require all new teachers to take at least one special course and must insist that teachers in service avail themselves of the opportunities for professional advancement offered by special summer courses. There always will be a few teachers who are sufficiently interested in their work to make personal sacrifices in order to increase their knowledge and efficiency, but many are unlikely to make much effort in this direction unless required to do so.

If this is to be done, however, those responsible for the organization of special courses must see to it that their offerings are of genuine interest and value to teachers of blind children. The future success and expansion of training facilities for teachers of the blind depend upon the degree of coöperation which can be secured between boards of control and superintendents, and those in charge of the special courses. If the former take an active interest in the problem and encourage their teachers to pursue special training, and if the latter do everything possible to make courses interesting and helpful, it may be expected that the future will see gratifying progress in elevating the professional status of teachers of the blind.

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[18] Woolston, Robert W., "Illinois School for the Blind," *The Teachers Forum,* IV, September, 1931, p. 16.

[19] See *The Teachers Forum,* IV, November, 1931, p. 33.

Duties of Teachers in Schools for the Blind.—Although the pupil load of the average teacher in a school or class for the blind usually is considerably less than is the case in ordinary public schools, the character of the work requires the expenditure of much time and energy. Considerable attention has to be devoted to individual instruction, particularly in day-school classes where several grades may be represented. The preparation of supplementary Braille material and the reading aloud of assignments from ink-print textbooks also make considerable demands upon teachers of children without sight.

In residential schools where teachers are required to live upon the grounds, numerous extra duties devolve upon them which not infrequently are the source of ill feelings and discontent. This is particularly true in cases where there is no clear demarcation between the duties of teachers and those of matrons and other individuals connected with the residential departments of the institution. A recent investigation shows that the majority of teachers residing in schools for the blind are required to perform certain extra duties, among which are included evening reading, supervision of evening study hour, mealtime duties, and Sunday and holiday supervision of pupils.[20]

The question as to how far superintendents are justified in demanding extra duties from their teachers is rather difficult to answer. It seems unfair to expect teachers who have had pupils under their care during a long school day to spend their evenings reading to them or supervising their study hour. It is perhaps unjust, also, to insist that teachers devote all or part of Sunday to the supervision of children whom they have to teach every day during the school week. It may be argued, also, that teachers need mealtime to themselves, especially the noon hour, in order to have an opportunity to relax and to turn their attention to matters other than the behavior of their pupils.

[20] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 33.

In some instances a solution of these problems has been sought in permitting all teachers to live outside the institution and to be free from most duties except those of the classroom.[21] When the school day is over, the teacher's responsibility for the children ends and is assumed by matrons and other staff members employed especially for that purpose. From a close observation of the plan it appears to promote a much better spirit among teachers and to increase their zest for, and interest in, their work. Whether or not it is possible or desirable for all residential schools is a question which experience alone can answer.

Some educators of the blind feel that the presence of teachers in the institution is necessary as a socializing factor.[22, 23] It is thought that the mingling of teachers and pupils at mealtime and during evenings and Sundays is of great social value to the children. Undoubtedly, if teachers are to live in residential schools, they should join to some extent in out-of-school activities, but it is unfair and unreasonable to expect them to devote the majority of their free time to extra duties. Although it may be some loss to pupils in the matter of socialization to have teachers live outside the institution, it is rather difficult to understand why this loss could not be compensated for to a great extent by an efficient staff of matrons and masters. As stated in Chapter XI, however, there is some value for guidance purposes in teachers having an opportunity to become acquainted with blind children out of school hours, and of course this opportunity is limited if teachers do not reside in the institution. This difficulty might be overcome partially by encouraging non-resident teachers to become acquainted with pupils outside regular school hours in cottage common rooms, and on the playground. These informal visits and the attendance of teachers at social functions given by the pupils might accomplish even more in the way of guidance than the forced contacts which many teachers consider disagreeable.

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[21] An example of this is the State School for the Blind, Jacksonville, Illinois.

[22] Allen, E. E., "The Family Plan at Watertown," *A. A. I. B. Proceedings,* 1915, pp. 44-45.

[23] Blesdoe, John F., "The Cottage Family Plan," *A. A. I. B. Proceedings,* 1915, pp. 42-44.

The whole question of teacher activities outside the classroom in residential schools for the blind should be investigated thoroughly, and different plans given a fair and exhaustive trial until one is discovered which best suits the particular needs of the school under consideration. Until this is done, and teachers themselves have an opportunity not only to express their views on the subject, but also to have them considered, the whole matter is likely to continue to be a source of complaint and to prevent proper *esprit de corps* among the staffs of many residential schools for the blind.

Salaries of Teachers in Schools and Classes for the Blind.—Having discussed in preceding sections the qualifications and duties of teachers in schools and classes for the blind, the problem of financial compensation may now be considered. It has been stated that salaries of teachers in residential institutions are too low,[24] but until recently practically no objective data on this subject have been available. In 1930, however, the Committee on the Visually Handicapped of the White House Conference on Child Health and Protection reported that the average salary of teachers in twenty-two residential schools for the blind was between $950 and $1000 in addition to living. The median low salary reported for twenty-six schools was $675 in addition to living.[25]

At first glance these figures indicate that salaries of teachers in schools for the blind are very low. If it is remembered, however, that in most instances living, which generally includes board, room, and laundry service, is furnished in addition, a somewhat different picture is presented. Thus, if $400 is allowed for living (which is a very moderate estimate) the average salary in twenty-two schools is, in reality, from $1350 to $1400, and the median low salary in twenty-six schools is $1075.

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[24] Burritt, O. H., "A Platform of Principles," *A. A. I. B. Proceedings,* 1924, pp. 211-214.

[25] Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* p. 33.

Statistics published by the National Education Association[26] show that in 1930-31 median salaries of elementary teachers in cities of varying sizes ranged from $1162 to $2118. The median salary paid to teachers of special classes[27] in city public-school systems ranged from $1850 to $2372 according to the size of the city. Salaries of teachers in rural schools throughout the United States, however, are much lower. Thus in 1927, 60.7 per cent of rural teachers[28] were receiving salaries of less than $1000 exclusive of living expenses.

Although the comparison of averages with medians may not be wholly accurate, some idea of the differences between salaries of teachers in schools for the blind and those in regular public-school systems may be gathered from a study of the figures just presented. While estimates given for teachers of the blind probably include high-school instructors, many of these have had no more training than is required of city elementary teachers. Salaries of the latter, therefore, probably offer a fairer basis for comparison than would those of city high-school teachers.

It will be noted that the average salary of teachers in twenty-two schools for the blind is from $718 to $768, less than the median salary of elementary-school teachers in the larger cities in 1930-31, but that it is from $188 to $238 higher than the median salary of elementary teachers in smaller cities. When compared with the median salary of special-class teachers in cities ranging from 30,000 to 100,000 population, however, the average for teachers of the blind is from $450 to $500 less.

Although the median low salary of $1075 in twenty-six schools for the blind presents a still more unfavorable comparison with median salaries of city elementary and special-class teachers, it is much better than the salaries of 60.7 per cent of rural teachers in the United States. When it is realized that a number of teachers in schools for the blind have no more and sometimes even less training than some rural teachers, the former perhaps are not so badly off as might at first appear.

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[26] "Salaries in City School Systems, 1930-31," *N. E. A. Research Bulletin,* IX, May, 1931, p. 167.

[27] *Ibid.,* pp. 167, 171.

[28] "The Scheduling of Teachers' Salaries," *N. E. A. Research Bulletin,* V, May, 1927, p. 139.

Salaries of teachers of day-school classes[29] for blind children are reported as ranging from $1400 to $3500. This compares favorably with the medians for special-class teachers in cities of various sizes, which in 1930-31 ranged from $1850 to $2372, as pointed out previously. The higher compensation of day-school class teachers as compared with teachers in residential schools may be based upon higher standards of ability, training, and experience.

From the foregoing it may be concluded that while many of the better teachers in residential schools for the blind are being underpaid, those with little training and experience are receiving as much as or more than they would in teaching seeing children. Granted that the financial compensation of the teaching profession generally is inadequate when compared with other gainful occupations, there seems little ground for claiming that teachers of the blind are paid less for their services than are members of other branches of the teaching profession. If teachers in residential schools for the blind desire compensation equal to that of special teachers in public-school systems, they must devote more time and money to general and special training and to professional advancement.

It sometimes happens that blind teachers are discriminated against in the matter of salary because of their lack of vision, although they may possess as good as or better preparation than seeing members of the staff, and also have superior teaching ability. This practice is distinctly unfair and is the result of the difficulty experienced by most blind teachers in obtaining positions. Superintendents, knowing this, permit such individuals to work sometimes for mere pittances, although they render quite as satisfactory service as do seeing teachers. This unjust discrimination should be discouraged and compensation should be based upon ability, training, and experience rather than upon possession or lack of vision. Not all blind teachers are satisfactory, neither are all seeing teachers, but those who are should be placed upon an equal footing and be paid according to the work which they accomplish.

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[29] "The Blind," *Special Education: The Handicapped and the Gifted,* p. 258.

The problem of adequate provisions for retirement and payment of pensions is closely associated with that of salaries of teachers in schools and classes for the blind. In the latter, of course, teachers are entitled to the same arrangements for retirement as are available to other members of the school system in which they are employed. Residential institutions which are under state boards of education may permit their teachers to participate in such provisions for retirement as are afforded by the state to teachers in general. In some instances institutions which are not directly under the control of state departments of education have pension systems which facilitate the retirement of teachers. Some schools, however, notably those under private or semi-private control, have no provisions whatever for the retirement of old teachers. It has been pointed out that in such cases there is a tendency to keep teachers too long, resulting frequently in the retention of outworn educational methods and the adoption of a stereotyped procedure. The establishment of a suitable retirement age with the provision of an adequate pension for all teachers in residential schools for the blind is a problem which requires immediate and careful attention. If teachers are expected to contribute a portion of their salaries toward a retirement fund, then salaries should be increased accordingly. Although teachers in residential institutions where board, room, and many incidentals are supplied, may be in a better position to save than are those in city schools, these savings even over a period of years are unlikely to be sufficient to provide for their old age. It is the duty of the school, therefore, to make arrangements which will enable teachers to serve without fear of the future, and to be willing to retire when their period of greatest usefulness is at an end.

Before the problem of salaries and retirement of teachers in residential schools for the blind can be solved satisfactorily, an intensive statistical study[30] should be made of such factors

[30] For an illustration of a study of this type consult: Baer, Joseph A., "For What Is the Teacher Paid?" *Educational Research Bulletin,* VII, May

as: (1) the relationship between salary and experience; (2) the correlation between salary and training; (3) the relationship between salary and teaching load and duties. Comparisons also should be made between blind and seeing teachers, and between teachers in residential schools and those in day-school classes. Such an investigation would supply an objective basis upon which a fairer and more adequate salary schedule for teachers of blind children could be based.

The Sight-Saving Class Teacher.—The successful sight-saving class teacher should possess all the recognized qualifications of a good teacher in any field. She should have a natural aptitude for teaching, thorough fundamental training, initiative, and enthusiasm. In addition it is highly desirable that she have special training in the theory and practice of teaching partially seeing children, including the organization and administration of sight-saving classes, special educational methods and devices, and the physiology and hygiene of the eye. No amount of special training, however, can compensate for a lack of natural ability, adequate general preparation, and experience which should be primary considerations in selecting teachers for sight-saving classes.[31]

Information collected by Myers concerning 227 sight-saving class teachers showed that 211 or 92.9 per cent, were college or normal-school graduates, and that 178, or 78.4 per cent, had taken special courses in sight-saving work. It is concluded, therefore, that "the typical sight-saving teacher is a college or normal-school graduate who has taken at least one course dealing specifically with sight-saving class work."[32]

Leaders in sight-saving work lay particular emphasis upon the fact that the teacher of partially seeing children should herself possess normal vision.[33] It is pointed out that the primary duty of the sight-saving teacher is to conserve the vision of her pupils and that, in doing so, she frequently must substi-

30, 1928, pp. 223-250, College of Education, Ohio State University, Columbus, Ohio.

[31] Hadley, Hazel, and Hathaway, Winifred, *Sight-Seeing Classes,* p. 17.

[32] Myers, Edward T., *A Survey of Sight-Saving Classes in the United States,* pp. 82 and 83.

[33] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 187.

tute her sight for theirs. Thus, it is essential that her vision be normal in order to meet these added demands easily and efficiently. Good general health and nervous stability, also, are indispensable to the successful sight-saving class teacher because of the expenditure of physical and nervous energy required in the instruction of partially seeing pupils.

From three to five years of successful experience in teaching physically normal children generally is regarded as a valuable prerequisite to the instruction of sight-saving class pupils.[34] Myers states that 163 of 217 teachers, or 75.1 per cent, had had teaching experience in the regular grades prior to entering sight-saving work. He also found that the median length of this experience was 9.8 years.[35]

During recent years there has been a movement in some quarters toward establishing specific standards for sight-saving class teachers and granting them special certificates. New York, for example, requires its teachers of partially seeing children to have (in addition to regular normal training) sixty hours of special pedagogic training, thirty hours of clinical eye work, and thirty hours of physical education.[36] Pennsylvania also has special requirements for its sight-saving class teachers. With the expansion of sight-saving work and the multiplication of facilities for special training, it is probable that this movement toward certification will become more widespread. It undoubtedly will be of marked assistance in the production of better sight-saving class teachers, and will afford protection and professional prestige to those already in the field.

Since the work of the sight-saving class teacher is more arduous and requires more training than that of the regular grade teacher, it is only fair that the former should receive additional compensation. Most school systems recognize this and make provision for the payment of a salary differential to teachers of sight-saving classes.[37] In one city, however, the salary schedule prohibits the payment of this differential if annual increases exceed a certain amount. Teachers of partially seeing children are, of course, entitled to the same provisions for retirement as are other members of the particular school system to which they belong.

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[34] *Ibid.*, p. 178.

[35] Myers, Edward T., Op. cit., pp. 83, 84, and 85.

[36] Hadley, Hazel, and Hathaway, Winifred, Op. cit., p. 17.

[37] Of 335 sight-saving classes 89.25 per cent pay teachers an annual differential ranging from $50 to $686. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 202.

The establishment of adequate facilities for the special training of sight-saving class teachers is one of the most important phases of sight-saving work. Three methods of providing such training may be distinguished (1) special courses in colleges, universities, and normal schools; (2) assigned reading with examinations; and (3) the training of teachers by the sight-saving class supervisor.[38] While the second and third methods may prove satisfactory in certain situations and certainly are preferable to no special training whatever, the first undoubtedly is the most efficient means of affording special preparation for teachers of partially seeing children.

Prior to 1921, however, no courses designed especially for the training of sight-saving class teachers were available. In that year such a course was offered at Teachers College, Columbia University, the first of its kind to be given in the United States. The importance of this work was realized by the National Society for the Prevention of Blindness, and through its untiring efforts and generous coöperation numerous courses were organized in various colleges and normal schools during the succeeding decade. The initiation of summer courses has been of great value in providing special training for regular grade teachers planning to enter the sight-saving field, as well as for the improvement of those already engaged in the instruction of partially seeing children.

Regular courses have been given at State Teachers College, Detroit; Michigan State Normal School, Ypsilanti; Teachers College, Columbia; the University of California; and New York University, while summer courses have been offered at Peabody College for Teachers; University of Cincinnati; Senior Teachers College, Western Reserve; University of Southern California; University of Chicago; Teachers College, Columbia University; State Teachers College, Buffalo, New York; Tulane University; and the Michigan State Normal College.[39]

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[38] Hadley, Hazel, and Hathaway, Winifred, Op. cit., p. 17.

In the summer of 1931, courses were offered at the following institutions: Tulane University, New Orleans; University of Chicago; State Teachers College, Buffalo, New York; and Teachers College, Columbia University. Seventy-one students representing many states were enrolled.[40, 41]

The content of these courses usually includes instruction in the administration of sight-saving classes; special educational methods and devices; the anatomy, physiology, and hygiene of the eye, with appropriate clinical and laboratory work; and opportunities for observation and practice teaching. The National Society for the Prevention of Blindness coöperates with colleges and normal schools in securing qualified instructors to handle various phases of the subject, and in some cases the coöperation of medical schools, also, is secured.

With the present outlook of an increased demand for well-trained sight-saving class teachers, there is every indication that facilities for special preparation in this field will not only be maintained at their present level, but also will be greatly expanded in the future. The fact that sight-saving classes are a comparatively recent educational innovation, and that new and better methods are constantly being discovered, also requires the maintenance of suitable means for bringing these discoveries to the attention of sight-saving class teachers already in service. Although much information is made available through the numerous publications of the National Society for the Prevention of Blindness, summer courses are far more effective for this purpose. It seems certain, therefore, that courses for teachers of partially seeing children are destined to become an established part of the curricula of many universities, colleges, and normal schools.

Summary.—When schools for visually handicapped children first were organized in this country no trained teachers were available. The development of methods for the instruction of blind pupils, therefore, was necessarily a process of trial and error, and resulted in much wasted time and energy. Experience has shown that the ideal teacher of children without sight should possess the following qualifications: (1) a four-year high-school course or its substantial equivalent; (2) for academic teachers three to four years in a normal school or college of education; (3) for teachers of non-academic subjects three to four years' training in their particular field; (4) at least one course in the psychology and education of the blind; and (5) from two to five years successful teaching experience with seeing children. The question as to the employment or non-employment of blind teachers in schools and classes for those without sight has evoked considerable discussion. Some believe that blind teachers are better able to understand the problems of their pupils and serve as a source of encouragement to them, while others argue that seeing teachers are necessary in order to prevent the development of undesirable habits and mannerisms. It seems unfair, however, to discriminate against teachers solely upon the basis of vision, as blind individuals who possess natural ability and good training undoubtedly can become very successful teachers.

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[39] "The Partially Seeing," *Special Education: The Handicapped and the Gifted,* p. 186.

[40] Consult: *The Sight-Saving Class Exchange,* Number 37, June, 1931, p. 2.

[41] Consult: *The Sight-Saving Class Exchange,* Number 38, November, 1931, p. 8.

The failure of administrators in charge of the education of blind children to insist that their teachers have special training probably is responsible in large measure for the fact that no courses on the psychology and education of the blind were available until recent years. The first course of this nature was organized in 1920, through the coöperation of Perkins Institution and Massachusetts School for the Blind, Division of the Blind, Massachusetts Department of Education, and Harvard University. The success of this course caused it to be repeated in succeeding years and in 1926 it was incorporated as a regular half-course in the curriculum of the Harvard Graduate School of Education. In 1926, also, a special-methods course was organized at Perkins Institution designed to provide instruction in methods of teaching blind children as well as opportunities for observation and practice teaching. In the summer of 1921 the George Peabody College for Teachers at Nashville, Tennessee, in coöperation with the Tennessee School for the Blind, offered special courses on the education of children without sight. These were given regularly each summer through 1926 when they were temporarily discontinued, but resumed again in the summer of 1931. Special courses also were offered in June, 1931, at the Illinois State School for the Blind, Jacksonville, Illinois; and during the academic year 1930-31 the University of California at Los Angeles offered courses in the education of the blind. If the number of schools requiring teachers to have special training continues to increase, there undoubtedly will be a corresponding expansion in the number and variety of courses dealing with the education of blind children.

Teachers who live in residential schools for the blind generally are called upon to perform numerous extra duties which not infrequently are the source of discontent and poor *èsprit de corps.* Among these extra duties are the evening reading hour, supervision of evening study period, mealtime duties, and Sunday supervision of pupils. In some instances a solution of the problem of duties has been sought by having teachers reside outside the institution and requiring them to assume very few responsibilities other than those connected with the classroom. This arrangement might not be practicable for all schools, however, and, in addition, many superintendents feel that the presence of teachers outside regular school hours is indispensable as a means of socialization. A thorough study of the whole question of teacher's duties should be made with a view to determining what can be fairly expected of them, and to establish a clear demarcation between the duties of teachers and those of matrons and masters.

Recent figures show that the average salary of teachers in twenty-two schools for the blind is from $950 to $1000 in addition to living, while the median low salary in twenty-six schools is $675 in addition to living. If the cost of board and room is estimated at $400, however, the average salary actually is from $1350 to $1400, while the median low salary is $1075. Although comparison between averages and medians is not very satisfactory, it is interesting to note that the average salary of teachers of blind children is from $718 to $768 lower than the median salary of elementary-school teachers in the larger cities in 1930-31, but it is from $188 to $238 higher than the median salary of elementary teachers in smaller cities. Comparison of the average salary of teachers of the blind with special-class teachers in the public schools shows that the former are receiving from $450 to $500 less. Although the median low salary of teachers in schools for the blind is less than the median for city elementary teachers, it is considerably more than that received by 60.7 per cent of rural teachers throughout the United States. Thus it appears that while some of the better teachers in schools for the blind are being underpaid, many are receiving adequate compensation for their training and experience. Teachers of day-school classes are paid from $1400 to $3500, which compares favorably with the median salary of special-class teachers in city public schools. While some residential schools for the blind have provisions for retirement of teachers, many do not. This results in the retention of members of the staff after the termination of their period of greatest usefulness. This problem needs immediate and careful attention so that teachers may work without fear of the future and be willing to retire when they have reached an age where efficient teaching is no longer possible. Factors influencing the salaries of teachers in schools for the blind should be investigated objectively in order to obtain a basis for fair and adequate compensation.

The ideal sight-saving class teacher should possess all the qualifications necessary to a successful teacher in any field. Special training is highly desirable, but it cannot compensate for lack of natural teaching ability, interest, and initiative. Myers found that "the typical sight-saving teacher is a college or normal school graduate who has taken at least one course dealing specifically with sight-saving class work," and usually has had teaching experience in the regular grades. The character of sight-saving work makes good health and normal vision particularly important assets for the teacher of partially seeing children. The special certification of sight-saving class teachers has not yet become a general practice, although two states now have standard requirements for sight-saving personnel. In most school systems teachers of partially seeing children are paid a differential, but some salary schedules prohibit the payment of this differential if annual increases exceed a certain amount.

Three methods of training sight-saving class teachers may be distinguished: (1) special courses in colleges, universities, or normal schools; (2) reading with accompanying examinations; and (3) the training of teachers by supervisors. Of these three the first undoubtedly is the most effective. The first course for sight-saving class teachers was offered at Teachers College, Columbia University, in 1921. Since then, through the interest and coöperation of the National Society for the Prevention of Blindness, many such courses have been organized in various colleges and normal schools. During the summer of 1931 four institutions offered courses for teachers of partially seeing children. Since the demand for well-trained sight-saving teachers still exceeds the supply, it is probable that the future will see the establishment of many regular courses at various colleges and normal schools throughout the country.

CHAPTER XIII

SUMMARY AND CONCLUSIONS

The present study has attempted an evaluation of existing facilities for the elementary education of visually handicapped children in the United States. Its specific aims have been: (1) to clear the ground for further research and to formulate and discuss problems needing investigation; (2) to assist teachers of visually handicapped children to a clearer understanding of fundamental theories and objectives; and (3) to stimulate the interest of research workers in the field of general education.

A blind child may be defined as one whose vision, after correction, is insufficient to permit him to be educated by visual methods. A partially seeing child may be regarded as one whose vision, after correction, is insufficient to permit him to be educated satisfactorily in the ordinary grades, but who can profit by the methods and apparatus used in sight-saving classes.

There are 14,400 blind individuals under twenty years of age in this country, only 6,000 of whom are being educated in schools and classes for the blind. In addition there are 50,000 partially seeing children, only 5,000 of whom are receiving instruction in sight-saving classes.

In order to promote a clearer understanding of the problems accompanying visual handicaps, the structure, function, and diseases of the eye have been discussed briefly and non-technically.

One of the most serious obstacles encountered by early educators of the blind, and one which still exists to some extent, was the popular belief that those without sight must necessarily be considered objects of charity. Although interest in the problems of blindness was shown by the eighteenth-century French philosophers, no systematic attempt to educate blind individuals was made until Valentin Haüy opened the first school for them in Paris in 1784. His invention of embossed print, with its subsequent development, probably has been the most important factor in the education of those without sight. From France the movement to educate blind children spread to England and Germany, and finally, in 1829, the first institution for them in the United States was incorporated. Since that time every state has made provision for the education of its blind children either by opening a state school or by sending them to adjacent states to receive instruction.

The first sight-saving class in the United States was opened in April, 1913, and during succeeding years the number has grown until on January 1, 1930, there were three hundred and fifty of them representing twenty-one states.

It is practically impossible to find a clear statement of the objectives of elementary education for blind children. It is implied, however, that the elementary period should be one of preparation for vocational training or for higher education. This concept of education as preparation for future living, rather than as life itself, characterizes much that has been written concerning the teaching of blind children. There is a tendency, also, for teachers to overemphasize formal sense training and to follow formal methods in the presentation of traditional subject matter. The aims of sight-saving classes have been stated as: (1) to provide instruction with a minimum of eye strain; (2) to teach pupils how to conserve their vision; and (3) to provide suitable vocational guidance and if necessary vocational training. While sight-saving classes are not beyond criticism, they are more advanced than are many schools for the blind, probably because the former always have been a recognized part of progressive public-school systems and therefore have had to conform to current standards.

Although the importance of pre-school training for blind children was recognized in this country as early as 1875, provisions are still inadequate. Under normal circumstances home environment for young blind children is preferable to that of an institution. Parents, however, must be assisted to an intelligent attitude toward their handicapped child, so that his opportunities for development may be equal to those of his seeing brothers and sisters. It is not known definitely what types of toys or of other materials are best suited to the needs of the pre-school blind child, but those which stimulate the tactual and auditory senses are thought to be most desirable. Kindergarten training for blind children tends to follow formal methods, although several schools may be rated as distinctly progressive in this work.

Apart from the pre-school testing of eyes, little attention seems to have been given as yet to the partially seeing child of pre-school age. It is important, however, that where ocular defects occur early in childhood, habits of vision conservation should be established as early as possible. Many of the nursery school and kindergarten activities which are used with normally seeing children also might be suitable for children with serious visual defects, provided that the teacher understood the nature of individual eye difficulties and arranged the program accordingly.

From the standpoint of socialization the instruction of blind children in day-school classes probably is preferable to their education in residential institutions. In a country as large as the United States, however, with its widely scattered rural population, residential schools are an administrative necessity. There is a tendency for the proponents of each system to base arguments upon *ideal* conditions rather than upon those which actually exist, but in general there is recognition that day-school classes and residential institutions must supplement rather than attempt to supplant each other.

One child in every one thousand of the school population is a potential candidate for a sight-saving class, and in some localities the ratio may be as high as one in every five hundred. In selecting and furnishing a sight-saving classroom, natural and artificial lighting, finish of walls and woodwork to reduce glare, and type of furniture and other equipment are of major importance. Probably the best criterion for judging the effectiveness of sight-saving classes is the extent to which habits of ocular hygiene persist after pupils leave school. This can be determined only through systematic and thorough follow-up studies. Types of teaching methods and appliances used in sight-saving classes should be determined according to the results of controlled experiments, rather than solely upon the basis of experience. Under existing conditions residential schools for the blind which enroll a large number of partially seeing children should establish sight-saving classes for them until such time as the public-school systems are in a position to do so.

It is conceded generally that the physical vigor of blind children is inferior to that of the seeing. This may be due either to faulty pre-school training or to the illness, accident, or disease causing blindness. Free out-door activity is preferable to formal gymnastics whenever possible. Most schools for the blind, however, lack constructive playground supervision. The importance of correct diet has not been realized by many educators of children without sight, and in some instances quantity is the criterion followed in the preparation of meals.

Available data indicate that the health of partially seeing children is approximately similar to that of the general school population. Numerous physical defects in addition to visual handicaps were noted, however, some being of a correctible nature, such as those directly attributable to malnutrition.

Existing information shows that the general intelligence of blind children is somewhat inferior to that of the seeing in that there are fewer superior and more inferior individuals among the former. Apart from maze tests practically no non-verbal measurements have been adapted for use with blind children. There are no adequate provisions for blind individuals who are feeble-minded or mentally retarded, and with the exception of rapid promotion schemes in a few schools, no provisions are made for the blind child of superior mentality.

Limited data, based upon I.Q. ratings, show that partially seeing children are of somewhat inferior intelligence, but that they seem quite superior when classified according to teachers' judgments. No thoroughly satisfactory intelligence test for partially seeing children, however, has been devised up to the present time.

Surveys show that blind pupils are from one to three years below the seeing in school achievement, this retardation being due principally to over-ageness. The accomplishment of blind pupils in different school subjects also varies widely. Progress in the development of achievement tests for seeing children has not been reflected proportionately in the education of the blind, and further work in the adaptation of standard measurements is needed. Academic retardation is a serious additional handicap to children without sight, and its importance should be realized by those responsible for their education.

The promotion rate of sight-saving class pupils compares favorably with that of the general school population. Nevertheless, there is considerable over-ageness among children enrolled in these classes. Furthermore, increase or decrease in over-ageness is not commensurate with mental ability. It is important that partially seeing children be kept at as high a level of school achievement as is possible without danger to vision.

Personality difficulties among blind children probably result from social conditions arising from lack of vision rather than from the handicap itself. Anxiety concerning the future is quite frequent among children without sight, and in many cases a rich and varied phantasy life, also, is present. Inadequate sex instruction in most schools for the blind probably is responsible for some personality difficulties among pupils. Although surveys indicate that speech defects are more prevalent among blind than among seeing children, only three institutions have corrective speech work.

Serious visual defects among school children frequently result in repeated failure which, in turn, produces a sense of futility and a feeling of inferiority in the pupil. This may be the cause of personality difficulties and even of anti-social behavior. The sight-saving class provides a means of substituting successes for failures, thus removing the primary cause of the disturbance. The mental-hygiene aspects of sight-saving classes, therefore, are of major importance, and should not be overlooked.

Residential schools for the blind should have programs of organized guidance embodying: (1) records and reports; (2) counselling; and (3) group guidance. While a number of schools have intelligence testing, results seldom are used for guidance purposes. Teachers should be able to do effective counselling work because of their close contacts with pupils, but proper coördination and supervision of their efforts are essential. The case-conference technique, supplemented with dramatization of biographical incidents involving moral choices, and the use of the radio should prove effective instruments for group guidance among blind children.

Probably the most important function of guidance in sight-saving classes is the formation of habits of ocular hygiene, and the influencing of pupils toward the choice of a vocation which will not make too great demands upon their vision. Methods of group guidance similar to those suggested for blind children also should be suitable for partially seeing pupils when sufficiently large and homogeneous groups can be assembled.

The ideal teacher of blind children should possess the following qualifications: (1) A four-year high-school course or its equivalent ;(2) three to four years of normal-school instruction; (3) training in the psychology and education of the blind; and (4) three to four years of successful teaching experience with seeing children. Few schools require teachers to have special training, and this has retarded the development of courses in the education of the blind. Since 1920, however, a number of such courses have been organized. Teachers in residential schools usually are required to perform extra duties which frequently are the source of discontent. A comparison of salaries paid to teachers in schools for the blind and to elementary teachers in small cities shows that the former probably are receiving adequate compensation for their training and experience. Salaries of teachers of day-school classes for the blind compare favorably with those paid to special-class teachers in most public-school systems.

The successful sight-saving class teacher should possess all the qualifications necessary to a superior teacher in any field, including good health, normal vision, desirable personal qualities, general and special training, and experience. Investigation shows that the typical sight-saving teacher is a college or normal-school graduate who has had at least one course dealing specifically with sight-saving work. Since 1921 many courses on the organization, administration, and methods of teaching sight-saving classes have been given at various colleges, universities, and normal schools throughout the country.

From the foregoing the following conclusions may be drawn:

(1) Fewer than one half of the blind individuals under twenty years of age in this country are receiving instruction in special schools and classes, while only about one tenth of the partially seeing children are being educated in sight-saving classes. The enactment of compulsory education laws applying to visually handicapped children, the enforcement of those already on the statute books of some states, and the expansion of existing educational facilities obviously are needed to correct this condition.

(2) Elementary education for blind children should be revised thoroughly in accordance with the best theories and practices in the education of the seeing, and its results evaluated by objective methods rather than by opinion and prejudice alone.

(3) Experiments should be devised to determine what types of play materials will be of greatest assistance to the normal development of the pre-school blind child.

(4) More attention should be given to the needs of the partially seeing child of pre-school age.

(5) Day-school classes for blind children and residential institutions should seek to supplement rather than to supplant each other.

(6) Scientific research should supplement experience in determining sight-saving class methods.

(7) Under existing conditions schools for the blind which enroll large numbers of partially seeing children should establish sight-saving classes until adequate provisions are made for them elsewhere.

(8) Residential schools for the blind are in need of adequate and efficient playground supervision.

(9) The problem of diet in schools for the blind requires thorough investigation with a view to the provision of well-balanced and appetizing menus for blind children.

(10) Adequate provision should be made for the blind feeble-minded, and suitable educational opportunities for men-

tally retarded and for mentally superior blind children should be developed through experimental methods.

(11) Satisfactory tests should be devised for measuring the intelligence of partially seeing children.

(12) Factors influencing the school success of blind children should be studied in order to reduce their academic retardation.

(13) Over-ageness among sight-saving class pupils should be investigated in order to determine its causes and to reduce retardation as far as possible without danger to vision.

(14) Educators of blind children should enlist the cooperation of competent psychiatrists and clinical psychologists to assist in the decrease or removal of personality difficulties among their pupils.

(15) Adequate and sane sex instruction should be introduced in all residential schools for the blind.

(16) Corrective speech work should be expanded to include the majority of residential institutions for children without sight.

(17) Greater attention should be given to the mental-hygiene aspects of sight-saving classes.

(18) Organized guidance should be valuable both in schools for the blind and in sight-saving classes.

(19) All schools for the blind should insist that their teachers have special training in addition to standard academic and professional requirements.

(20) Extra duties required of teachers in residential schools should be investigated, and a clear demarcation between the responsibilities of teachers and those of masters and matrons should be determined.

(21) An objective investigation of the problem of salaries and retirement in schools for the blind should be made in order to obtain a basis for fair and adequate compensation.

Throughout this study the need for experimentation and research has been emphasized in connection with practically every problem discussed. This field should be valuable to the research worker, as the majority of its problems are as yet untouched. Lack of funds, lack of interest, and failure of those in charge of the education of visually handicapped children to understand the meaning of research have retarded such experimental approaches to their problems as have been initiated within recent years. There is a tendency, also, for those who sponsor this work to expect bizarre and sensational results, and to regard it as a form of publicity rather than as a slow, diligent, and non-spectacular search for truth.

It is hoped that this study may, in some measure, serve to stimulate and direct those who are interested in advancing the status of education for visually handicapped children. The investigator will encounter difficulties in this as in other branches of education, but if he perseveres, his efforts eventually will be recognized, and he will be afforded an opportunity to make genuine contributions to the advancement of a hitherto neglected branch of education.

APPENDIX

A SELECTED ANNOTATED BIBLIOGRAPHY

I. References Dealing Primarily with the Education of Blind Children

"Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection.* The Century Company, New York, 1931. 365 pages.

The first publication resulting from the 1930 White House Conference on Child Health and Protection. Addresses delivered at the Conference and résumés of various committee reports are presented. Section IVB on the Physically and Mentally Handicapped, pages 291-318, contains valuable information concerning the education of the blind.

Allen, E. E., *The Perkins Institution for the Blind,* Privately Printed at Watertown, Massachusetts, 1924. 65 pages.

This booklet consists principally of reprinted excerpts from annual reports, and features memorable events in the history of Perkins Institution.

Allen, E. E., "The Harvard Course on the Education of the Blind," *Outlook for the Blind,* XIX, June, 1925, pp. 8-9.

An account of the development of the general course on the education of the blind given under the joint auspices of Harvard University and Perkins Institution. The ultimate aim of this course is "to help lift the cause of the education of the blind to a higher plane than it has ever yet occupied."

Allen, E. E., "A Survey of the Work for the Blind in the United States from Its Beginning Until Now," *American Association of Instructors of the Blind Proceedings,* 1926, pp. 290-298.

This article is an attempt to survey briefly the education of the blind in the United States from 1830 until 1926. It describes the work of Haüy and Braille; the establishment of the three pioneer schools at Boston, New York, and Philadelphia; the founding of the state schools; the type controversy; and other influences of major importance. Although many valuable details necessarily are omitted, a fairly comprehensive picture of the development of work for the blind in this country is presented.

Anon., "The Story of the Boston Nursery for Blind Babies," *Outlook for the Blind,* X, Autumn, 1916, pp. 74-76.

This article describes the incorporation, maintenance, and progress of the Boston Nursery for Blind Babies. Details concerning the type of service offered by this institution, also, are given.

Best, Harry, *The Blind,* The Macmillan Company, New York, 1919. 763 pages.

Probably the most voluminous and comprehensive single work on the blind ever published. Among other aspects of the work it deals with the legal status of the blind; incidence and prevention of blindness; educational provisions for the blind; economic and social conditions of the blind, and organizations interested in those without sight. Although many of the statistical facts contained therein should be brought up to date, the book still remains a valuable source of information on blindness and the blind. Its viewpoint, however, is somewhat more sociological than educational.

Boettger, O. H., "Aims of Physical Education," *American Association of Instructors of the Blind Proceedings,* 1930, pp. 541-542.

The author stresses the need of physical training in the education of the blind and suggests various types of exercises and games. Probably more emphasis is placed upon formal gymnastics than is found generally in modern schools for the seeing.

Bürklen, Karl, "Das Tastlesen der Blindenpunktschrift," *Beihefte zur Zeitschrift für angewandte Psychologie,* No. 16, I, pp. 1-66. (An English translation by Dr. Frieda Kiefer Merry is now available through the American Foundation for the Blind, Inc., New York, New York.)

This article presents an historical summary of the development of raised print, a résumé of various theories on tactual reading, and a description of experiments concerned with the mechanics of finger reading.

Such problems are discussed as: the size and height of Braille characters; logical arrangement of dots versus shape of letters; the measurement of touch movements; the degree of pressure exerted during touch reading; hand preference; fatigue, speed, and comprehension in tactile reading.

Burritt, O. H., *The Aim in the Education of the Blind,* Pennsylvania Institution for the Instruction of the Blind, Overbrook, Philadelphia, Pennsylvania, 1912. 12 pages.

This article expresses the point of view that education is "preparation for life," and places special emphasis upon training for self support.

Burritt, O. H., "The Education of the Blind," *Outlook for the Blind,* X, Winter, 1916, pp. 107-112.

The writer calls attention to the fact that the problem of educating blind children is very complex on account of the wide variations in ability among pupils; differences in degree of vision and age of blinding; and the wide range of ages within grades.

Burritt, O. H., "A Platform of Principles," *American Association of Instructors of the Blind Proceedings,* 1924, pp. 210-220.

This paper, by a recognized authority in the field, discusses almost every aspect of institutional education for blind children. Housing plans, personnel, health, and curricula are representative of the topics considered.

Burritt, O. H., "The Visually Handicapped Feeble-Minded," *The Teachers Forum,* III, March, 1931, pp. 9-12.

A summary of existing provisions in various countries for the blind feeble-minded. Two main points are discussed about their education: (1) special provisions for them in regular institutions for the feeble-minded, or (2) a separate cottage for their education in schools for the blind.

Caldwell, Floyd F., *A Comparison of Blind and Seeing Children in Certain Educational Abilities,* American Foundation for the Blind, Inc., New York, 1932. 28 pages.

The author compares the performances of blind and seeing children upon the reading examinations of the Stanford Achievement Tests, Forms A and B. The blind group was composed of 34 junior high school students from the California School for the Blind compared with pupils in the low seventh grade of the Oakland High School. It is concluded that (1) blind children require from three to three and one-half times longer than do the seeing; (2) that short practice exercises seem warranted in the case of the blind; and (3) that the achievement of the blind compares favorably with that of the seeing when the speed factor is eliminated, although the former are retarded about three years when age is considered.

Although the data are admittedly limited, the investigation seems to have been done carefully. The historical introduction seems irrelevant in a study of this type and might well have been omitted.

Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection,* October, 1930. (Unpublished).

This report summarizes the most recent information obtained through questionnaires sent to schools and classes for the visually handicapped in the United States. It includes data on the definition and incidence of blindness; the number of schools and classes for blind children, and the per capita cost of their instruction; qualifications, duties, and salaries of teachers and officers; character of pupil personnel with emphasis upon health, vision, and mentality; and provisions for pre-school and kindergarten training, intelligence testing, and clinical methods. An unannotated bibliography is appended.

Although this report represents the expenditure of much time and energy, and undoubtedly is one of the most valuable recent studies in the field, it might perhaps have been better organized and might have included more factual material.

Cox, A. H., "Physical Education Methods and Objectives" (For Boys), *American Association of Instructors of the Blind Proceedings,* 1930, pp. 538-541.

The value of general physical fitness, especially for blind children, is indicated and many suggestions are made for an effective program of physical education in schools for the blind.

Curtis, J. B., "The Inventor of the Hall Braille-writer," *Outlook for the Blind,* XXI, June, 1927, p. 5.

This article presents a sketch of the life of Frank H. Hall and his contributions to the education of the blind, which include the invention of the Braille-writer (1892), stereotypemaker (1892), and a mapmaker (1897). He deserves chief credit, however, for the establishment of classes for blind children in the Chicago Public Schools (1900).

"Custodial Care of the Blind Feeble-Minded," *Report of Commission to Study Conditions Relating to Blind Persons in Pennsylvania*, Published at Harrisburg, Pennsylvania, 1925, pp. 51-53.

The principal idea expressed in this report is that blind feeble-minded individuals should be placed in institutions for the feeble-minded, since mental defect is more serious than lack of vision. A state subsidy is urged for such individuals, not more than ten of whom should

be admitted to one institution. Illustrative cases of blind feeble-minded children are appended.

Dow, James J., "Suggestions for Studies in Psychology," *American Association of Instructors of the Blind Proceedings,* 1894, pp. 35-38.

This paper is of historical significance because it points to the need of psychological studies of the blind, and the value of experimental work in schools for those without sight, long before the importance of research was realized in the field of general education.

Drummond, W. B., "A Binet Scale for the Blind and a Provisional Point Scale for the Blind," Reprinted from the *Edinburgh Medical Journal,* XXIV, 1920. 59 pages.

A description of Drummond's intelligence scale for the blind, standardized upon 96 blind children and 88 seeing children with their eyes closed. Comparison of the intelligence of blind and seeing children of the same age is urged.

Fladeland, Sina V., "Some Psychological Effects of Blindness as Indicated by Speech Disorders," *The Journal of Expression,* IV, September, 1930, pp. 129-134.

The author concludes that blindness accentuates certain personality traits, but does not produce any distinct types of personality. She claims, however, that blindness interferes with physical activity and decreases sources of possible stimuli; increases nervous and physical strain; tends to thwart wish fulfillment; and makes the person thus handicapped the exceptional member of his group. Her data are based upon the observation of 126 blind children, 5 to 19 years of age, referred for speech correction over a period of five years, and upon objective social ratings (Terman's Scale) of 30 blind children.

Fladeland, Sina V., "Speech Defects of Blind Children," *The Teachers Forum,* III, November, 1930, pp. 6-8.

This article points out the prevalence of speech defects among blind children; classifies and briefly describes these defects; calls attention to the fact that they can be removed or minimized; and indicates their educational, social, and economic significance for blind individuals.

Foley, Kate, "The Home Teacher and the Child of Pre-School Age." *Outlook for the Blind,* XXI, December, 1927, pp. 41-44.

The writer tells how the home teacher can be of service to blind children of pre-school age by encouraging parents to take a normal attitude toward their training.

French, R. S., "The Function and Value of Research in Schools and Classes for the Visually Defective," *Outlook for the Blind,* XXII, December, 1928, pp. 12-17.

The startling statement is made that, "Our education, including most of our present curriculum and practices in schools for the blind, really fits a world of from fifty to a hundred and fifty years ago! . . ." The need of basing educational procedure upon scientific research is emphasized and a number of problems requiring investigation are listed.

French, R. S., "Origins of the Barbier-Braille System," *American Association of Instructors of the Blind Proceedings,* 1930, pp. 461-463.

A discussion of the point system of raised print developed by Barbier, and its modifications by Braille. The writer's criticisms of the use of contractions are based upon opinion rather than experimental evidence.

French, R. S., "The Case for the Residential School," *American Association of Instructors of the Blind Proceedings,* 1930, pp. 455-458.

The advantages of the residential school for the blind are discussed under eight topics based upon twenty-three years' experience of the author. In formulating his arguments he appears to have had ideal conditions in mind rather than those which actually exist in the majority of residential schools.

French, R. S., *From Homer to Helen Keller,* American Foundation for the Blind, Inc., New York, 1932. 298 pages.

This treatise is divided into two parts. Part I is concerned with the early attitudes toward the blind and the beginnings of their systematic instruction in France, Germany, England, and the United States. Part II discusses vocations and avocations of blind people, social aspects of blindness and recent educational, sociological, and psychological progress in the field. The book is interesting and comprehensive, but some of its value perhaps is lost by the author's tendency to exaggerate.

Haines, Thomas H., "A Psychological Survey of the Ohio State School for the Blind," *Outlook for the Blind,* IX, Winter, 1916, pp. 88-92.

A discussion of a mental survey of 224 individuals in the Ohio State School for the Blind, only 58 of whom could be classified as really blind.

Substitute tests devised for the Binet Scale and adaptations for the Yerkes, Bridges, Hardwick Point Scale are described. The writer also presents tables showing the educational retardation of blind children and ascribes this chiefly to late school entrance. Normal blind pupils, however, tend to reduce their retardation as they progress through the grades.

Haines, Thomas H., "Mental Measurements of the Blind," *Psychological Monograph,* XXI, Number 1, April, 1916 (Whole Number 89), Psychological Review Company, Princeton, New Jersey. 86 pages.

This monograph describes a survey of the intelligence of 52 totally blind pupils in the Ohio State School for the Blind in May, 1915, using an adaptation of the Yerkes, Bridges, Hardwick Point Scale.

Haines, Thomas H., "Report of New Cases and More Reliable Age Norms of Intelligence by the Point Scale for the Blind," *Journal of Educational Psychology,* X, March, 1919, pp. 165-167.

Presentation of supplementary data to be used with the monograph already published.

Halfpenny, Amy K., "Helps for the Mother of a Blind Child," *Outlook for the Blind,* VIII, Spring, 1914, pp. 41-46.

This article contains many practical suggestions for the care and training of young blind children. The author is convinced that "the primary object of a blind child's education should be to make him as independent and inconspicuous as possible . . . so that eventually he may command the attention, confidence, and respect of society."

Haüy, Valentin, (Blacklock, Thomas, translator), *An Essay on the Education of the Blind,* Paris, 1786. Reprinted and Published by Tompkin and Shardlow, St. Martin's, 1889. 36 pages.

One of the most valuable documents in the history of the education of the blind. It describes in detail the first systematic attempt to educate individuals without sight, and presents Haüy's point of view regarding the vocational possibilities of blind people.

Hayes, S. P., "The Work of the Department of Psychological Research at the Pennsylvania Institution for the Instruction of the Blind," *Outlook for the Blind,* XIV, Spring, 1920, pp. 5-20.

Results of 670 individual intelligence examinations (Irwin-Binet series) in three schools for the blind show that "superior pupils are much more rare among the blind than among the sighted, while inferior pupils are much more numerous." An I.Q. classification of these data is given. Results of certain group tests of intelligence and achievement are also presented, and the comments are made on the psychology of the blind.

Hayes, S. P., *Self-Surveys in Schools for the Blind,* Publications of the Pennsylvania Institution for the Instruction of the Blind, No. 2, December, 1921. 60 pages.

A collection of mental and educational tests adapted for use with blind children. The average teacher in schools for the blind might have difficulty in interpreting the graphs showing a comparison of the performances of blind and of seeing children. Many of the tests adapted in this manual have now been superseded by more satisfactory measures.

Hayes, S. P., *Preliminary Study of the Influence upon School Success of the Age at Which Vision is Lost,* Publications of Perkins Institution and Massachusetts School for the Blind, No. 1, January, 1923. 8 pages.

Achievement tests given to 600 blind pupils classified according to age at which their vision was lost showed that the median attainment of those who lost their vision early measured up to that of the whole number examined, while those with increased visual experience showed no upward trend. The conclusion is that there is no functional difference in the mental content of the congenital and adventitious blind.

Hayes, S. P., *Ten Years of Psychological Research in Schools for the Blind, Publication* No. 4, The Pennsylvania Institution for the Instruction of the Blind, Overbrook, Philadelphia, 1927. 16 pages.

A summary of the psychological research carried on under the direction of Dr. Hayes, principally at The Perkins Institution and Massachusetts School for the Blind and The Pennsylvania Institution for the Instruction of the Blind from 1916 to 1927.

Hayes, S. P., "The New Revision of the Binet Intelligence Tests for the Blind," *The Teachers Forum,* II, November, 1929, pp. 2-4.

A brief history of the adaptation of the Binet Scale for use with the blind and a list of changes from the Irwin-Hayes Scale appearing in the new Hayes revision are given.

Hayes, S. P., *Terman's Condensed Guide for the Stanford Revision of the Binet-Simon Intelligence Tests Adapted for Use With the Blind,* Publications of Perkins Institution and Massachusetts School for the Blind, No. 4, April, 1930. 47 pages.

This manual gives detailed instructions for administering, scoring, and interpreting the Hayes Adaptation of the Stanford Revision of the Binet-Simon Intelligence Scale for the Blind. A brief history of intelligence testing among the blind and the changes included in the new revision are presented in the preface.

Horn, John L., *The Education of Exceptional Children,* The Century Company, New York, 1924. 343 pages.

This book deals with the education of all types of exceptional children. Chapter XII (pages 267-290) discusses day-school classes for the blind, the principal argument being in favor of greater centralization.

Howe, S. G., "Counsels to Parents of Blind Children," *Supplement to the Forty-Third Annual Report of the Perkins Institution for the Blind,* Wright and Potter, Boston, 1875, pp. 17-28.

Throughout this article Dr. Howe emphasizes the need of providing normal physical activity for small blind children. His belief in the importance of the pre-school period, especially for children without sight, marks him as a pioneer in this field.

Illingworth, W. H., *History of the Education of the Blind,* Sampson, Low, Marston, and Company, Ltd., London, 1910. 167 pages.

A readable account of some of the more significant facts in the education of the blind up to 1910 is given in this book. Such topics are included as: the psychology of blindness; the early education of the blind; the development of tangible print; and a description of the lives and contributions of a number of eminent blind people.

Irwin, R. B., "A Binet Scale for the Blind," *Outlook for the Blind,* VIII, Autumn, 1914, pp. 95-97.

An account of the first attempt to adapt the Binet Scale for use with the blind made by the author under the supervision of Dr. Henry H. Goddard.

Irwin, R. B., "Recent Developments in Public School Work for the Blind," *Outlook for the Blind,* XI, Summer, 1917, pp. 25-30.

A fairly comprehensive outline of the scope and function of day-school classes for blind children and of sight-saving classes for those of partial vision.

Johnson, Alexander, "Children Who Are Doubly Handicapped" (Feeble-minded and Blind), *Training School Bulletin,* XI, May, 1914, pp. 40-42.

This article represents the combined opinions of two superintendents of schools for the feeble-minded; one superintendent of an institution for the blind; one principal of a school for the feeble-minded; and one experienced psychologist. The conclusion is that feeble-mindedness is a more serious defect than blindness, therefore, blind feeble-minded individuals belong in institutions for the feeble-minded rather than in schools for the blind.

Kappes, Marion, "Measures of Musical Talent," *The Teachers Forum,* IV, September, 1931, pp. 2-7.

The author reviews various tests of musical aptitude and achievement and offers suggestions for their adaptation for use with blind children. No data from test results are included.

Kiefer, Frieda A., "The Experimental School—The Department of Special Studies," *American Association of Instructors of the Blind Proceedings,* 1928, pp. 405-408.

The origin, history, and functions of the Department of Special Studies and its progress to June, 1928, are outlined in this article. A number of problems in the education of blind children which require extensive research are listed.

Knie, Johann G., *A Guide to the Proper Management and Education of Blind Children During Their Earlier Years* (Translated from the German by William Taylor), Fourth Edition, Simpkin, Marshall and Company, London, 1861. 80 pages.

This book deals with the treatment of the infant during the first few years of life, school instruction, and the education of the blind generally. The appendix contains short biographical sketches of eminent blind people. Practical suggestions are made for teaching the blind child how to walk, how to use his hands, his taste and smell, and his hearing; how to dress and undress, and how to feed himself; and how to stimulate his intelligence. Although published in English in 1861 this book still remains one of the most practical treatises on the pre-school blind child.

Knotts, J. R., and Miles, W. R., "The Maze-Learning Ability of Blind Compared with Sighted Children," *Journal of Genetic Psychology,* XXXVI, March, 1929, pp. 21-50.

Forty blind children, ranging in age from fourteen to twenty years, paired with forty normal children (blindfolded) carefully matched as to age, sex, and intelligence were tested with a stylus maze and a high-relief maze. Twenty pairs were given the stylus maze and the other twenty pairs the high-relief maze. Results indicated that the blind made greater use of the verbal method of learning than the seeing; they were more variable and their median scores were somewhat superior to the others in number of trials, total errors, and total time. A high relationship was found between mental age and maze learning, and the high-relief maze was more easily learned than the stylus maze.

Koch, Helen L., and Ufkess, Jennette, "A Comparative Study of Stylus Maze Learning by Blind and Seeing Subjects," *Journal of Experimental Psychology,* IX, April, 1926, pp. 118-131.

After comparing the performances of nineteen pupils from the Texas School for the Blind, possessing all degrees of sight, ranging in age from fourteen to twenty-six years with those of one hundred normal senior high school and university students, fourteen to thirty-two years of age upon a metal maze, the authors conclude that the blind subjects are less successful on the average than are the normal subjects; that visual experience before the onset of blindness is helpful, and that there is a high relationship between intelligence and maze learning. It is doubtful if these conclusions are warranted from the small number of blind subjects, and the crude adaptation of the Army Alpha Test used in estimating their intelligence.

Langworthy, J. L., "Special Methods Class 1926-1927," *Outlook for the Blind,* XXI, September, 1927, pp. 56-57.

A description of the Special Methods Course given at Perkins Institution and Massachusetts School for the Blind. The content includes: lectures; readings and reports; practice teaching and observation; and opportunities to learn special types of work.

League of Nations Health Organisation, *Report on the Welfare of the Blind in Various Countries,* Official Number: C. H. 818, Geneva, 1929. 284 pages.

The information obtained in this report is based upon replies to questionnaires sent out by the Health Section of the League. Almost every branch of work for the blind is covered, but certain of the data given on the education of the blind in the United States are inaccurate.

Lewis, F. Park, "The Blind Child," *Outlook for the Blind,* X, Spring, 1916, pp. 5-9.

The writer emphasizes the need of recognizing visual defects in children at the earliest possible age, and stresses the importance of the pre-school period in the case of blind children.

Maxfield, Kathryn E., *Adaptation of Educational Tests for Use With Blind Pupils,* Series III, Educational Measurement, Number 1, Educational Publications, Bureau of Research and Education, American Foundation for the Blind, Inc., New York, May, 1927. 56 pages.

This pamphlet contains an adaptation of the reading and dictation tests of the Stanford Achievement Examination Forms A and B, and of the Gray Oral Reading Check Tests, Sets I, II, III, and IV. Tentative norms are given based upon a relatively small number of cases.

Maxfield, Kathryn E., *The Blind Child and His Reading*, American Foundation for the Blind, Inc., New York, 1928. 215 pages.

This book is an attempt to deal with the problems involved in teaching Braille reading to blind children. Although many helpful suggestions are offered, those who read Braille tactually may question some of the opinions expressed. Certain statements regarding the mechanics of tactual reading have not been borne out by experimental investigations.

Merry, Frieda Kiefer, "Types of Errors Made in Fundamental Arithmetical Processes by Pupils in Six Schools for the Blind," *The Teachers Forum,* III, November, 1930, pp. 8-19.

A survey was conducted upon pupils in Grades 3 through 6 from six representative schools for the blind to determine the type of errors made in fundamental arithmetical processes. With the possible exception of short division, the most difficult as well as the easiest number combinations for blind children correspond closely to those for seeing children. There is also a favorable comparison between blind and seeing children as to total scores.

Merry, Frieda Kiefer, "Common Language Errors Made by a Representative Group of Blind Children," *Motivating Language Lessons Among Blind Children in the Elementary Grades,* Perkins Institution Publications, No. 10, Watertown, Mass., June, 1931, pp. 34-47.

This article summarizes the results of three equivalent forms of the Wilson Language Test upon 254 blind children in Grades 3 to 6 enrolled in two day-school classes and eight residential schools for the blind. The types of errors in language usage recognized by these children are listed, and a comparison between the achievement of blind and seeing children shows that the former are retarded on the basis of chronological age. Suggestions are offered for increasing the effectiveness of language teaching in schools for the blind.

Merry, Frieda Kiefer, "Promoting Good Citizenship Among Blind Children through the Problem-Conference Method," *The Teachers Forum,* IV, Part I, January, 1932, pp. 58-60; Part II, March, 1932, pp. 75-78.

Part I describes the problem-conference method of character education through the presentation, for class discussion, of concrete problems involving social issues, while Part II contains ten problems suitable for use with blind children.

Merry, Ralph V., "To What Extent Can Blind Children Recognize Tactually Simple Embossed Pictures?" *The Teachers Forum*, III, September, 1930, pp. 2-5.

This preliminary investigation was undertaken in an effort to show how much meaning simple embossed pictures have for blind children. It was found that ability to recognize them was limited, depending upon identifying marks, comprehension of perspective, and degree of familiarity of the object; it had no relation to intelligence or chronological age; children with some vision excelled those totally blind.

Merry, Ralph V., "Adapting the Seashore Musical Talent Tests for Use with Blind Pupils," *The Teachers Forum,* III, March, 1931, pp. 15-19.

A brief description of the Seashore Musical Talent Tests is given in this article together with a suggested technique for administering them to blind subjects. Data are presented for 354 individual tests upon 44 pupils. The author concludes that it is possible to adapt the Seashore Tests for use with the blind, and that the average music teacher should be able to obtain satisfactory results.

Merry, Ralph V., "An Experiment in Teaching Tactual Reading to Seeing Subjects," *Journal of Genetic Psychology,* XXXIX, September, 1931, pp. 407-413.

This article describes an experiment in teaching two seeing subjects to read Braille tactually. Thirty-two ten-minute periods of instruction were given, followed by an examination in which each subject was required to read a simple passage tactually and then an equivalent form visually. Results indicated (1) that the subjects did not reach first-grade reading norms; (2) that they read much better visually than tactually, although instruction had been entirely tactual; and (3) that the general shapes of the Braille characters were of more importance in learning them than were their logical arrangement and number of dots.

Meyer, G. F., "Some Advantages Offered Children in Day-School Classes for the Blind in the Public Schools," *Outlook for the Blind,* XXII, March, 1929, pp. 9-15.

A discussion of the advantages of public-school classes for blind children. These are considered under the following five headings: family life, community participation, vocational inspiration and choice, educational advantages, and certain broad social contacts. The author believes that the day-school principle is fundamentally sound and that its existing weaknesses can be corrected through careful investigation.

Muhl, Anita M., "Results of Psychometric and Personality Studies of Blind Children at the California State School for the Blind," *American Association of Instructors of the Blind Proceedings,* 1930, pp. 568-573.

From studies of 105 children (with I.Q.'s ranging from 43 to 161) at

the California School for the Blind the investigator concludes that there are numerous personality problems among blind children, many of which can be adjusted satisfactorily. Among the problems needing attention are: the presence of marked suggestibility, lack of initiative, the tendency to become discouraged easily, and sensitiveness. A rich phantasy life reveals death ideas and sadistic trends.

Osborn, Vivian, "The Educational Value of Physical Education for Blind Girls," *Outlook for the Blind,* Part I, XX, September, 1926, pp. 34-37; Part II, December, 1926, pp. 13-17; Part III, March, 1927, pp. 46-49.

Part I is devoted to quotations from various sources to show that blind children need physical training because they are likely to develop sedentary habits, and because it is necessary for them to acquire as much freedom of movement as possible. Attention is called to the prevalence of posture defects among blind girls, these being ascribed chiefly to parental neglect.

Part II describes exercises, games, and dances which were found successful with blind girls. Swimming has an important place in the program. The possibility of correlating physical training with school social affairs is suggested.

Part III is a further description of dances and games for blind pupils. For successful work spontaneous interest on the part of the pupils and patience and perseverance on the part of the teacher are necessary. The appended bibliography would be much more useful if detailed references were given.

Palmer, F. E., *Helps and Suggestions for Parents of Blind Children,* The Iowa School for the Blind, Vinton, Iowa, (n.d.) 17 pages.

A pamphlet designed for distribution among parents of blind children. It contains much practical advice, but no essentially new suggestions as to the care and training of pre-school children without sight. This material is valuable because of its availability, its simplicity of language, and attractive form.

Paterson, Janet G., "Education of the Blind Child in Public Day Schools," *Outlook for the Blind,* XV, Spring, 1921, pp. 70-76.

This is a very clear and readable account of the work of public-school classes for blind children. Five principal topics are discussed: a description of a home room; the social and academic scope of these classes; organization of work; the importance of the teacher to the success of these children; and the coördination of the blind child with his family.

Pintner, Rudolph, *Intelligence Testing* (*Methods and Results*), (Second Edition), Henry Holt and Company, New York, 1931, Ch. XIX.

Chapter XIX (pp. 426-431) of this generally available book gives a summary of the development of intelligence tests for the blind based primarily upon the work of Dr. S. P. Hayes.

Rand, Lotta S. (Compiler), *Directory of Activities for the Blind in the United States and Canada,* (Revised Edition), American Foundation for the Blind, Inc., New York, 1932. 375 pages.

This directory lists all the important schools for the blind, as well as local, state, and national agencies and organizations interested in the welfare of those without sight in the United States and Canada.

Ritchie, J. M., *Concerning the Blind,* Oliver and Boyd, London, 1930. 244 pages.

One of the most recent books dealing with the educational and social problems of the blind, especially in Great Britain. Quotations of historical significance are given from various original sources. Chapters X, XI, and XII present the author's views on the psychology of blindness.

Sizeranne, Maurice de la, (Lewis, F. Park, translator), *The Blind As Seen Through Blind Eyes,* G. P. Putnam's Sons, New York, 1893. 154 pages.

This book is an attempt to make the public understand that the blind do not constitute a peculiar class, and shows that they can earn their livelihood if properly educated. A most interesting historical account of the work and influence of Valentin Haüy is given. The book is perhaps a greater contribution from the standpoint of sociology than from an educational point of view.

Speakman, Martha T., *Recreation for Blind Children,* Publication No. 172, United States Department of Labor, Washington, D. C., 1927. 76 pages.

The compiler of this pamphlet stresses the value of play for blind children and calls attention to the need of providing opportunities for them to play with seeing children. A comprehensive list of plays and games suitable for children of all ages and for all occasions is given with detailed directions.

Steinberg, Wilhelm, "Der Blinde als Persönlichkeit," Monograph 16, *Zeitschrift für angewandte Psychologie,* Leipzig, 1917, pp. 83-93. (An English translation by Dr. Frieda Kiefer Merry is now available through the American Foundation for the Blind, Inc., New York, New York.)

A discussion of the psychology of blindness based principally upon the author's personal experiences. He believes that the blind differ psychologically from the seeing, and that the recognition of this difference will aid in the promotion of better adjustment among individuals without sight.

Stinchfield, Sara M., *The Psychology of Speech,* Expression Company, Boston, 1928. 331 pages.

This book as a whole deals with such topics as: the phylogenetic development of language; the elimination of speech defects; the physiological bases for speech; phonetic exercises; the relation of speech to personality problems; and measurements of speech. It is included in this bibliography because of the author's references to the personality problems of handicapped children and her description of speech surveys in several schools for the blind.

Summers, Mary D., "Placement of the Sub-Normal Blind Child," *The Teachers Forum,* III, September, 1930, pp. 13-16.

The writer of this article discusses the aims and training of blind children with subnormal intelligence, and describes the methods employed in a special day-school class for mentally retarded blind children in Philadelphia. Emphasis is placed upon the need of adequate playground facilities for this type of child.

Swinerton, L. D., "Posture Training for Blind Children," *The Teachers Forum,* II, January, 1930, pp. 10-11.

A very clear explanation of postural defects is given, and the importance of correct posture for blind children is urged. One hun-

dred and eighty cases coming under the writer's supervision at Perkins Institution are listed, and attention is called to the necessity for detailed follow-up work if permanent results are to be obtained.

"The Blind" (Section 111 F), *Special Education: The Handicapped and the Gifted* (A Publication of the White House Conference on Child Health and Protection), The Century Company, New York, 1931, pp. 243-274.

A brief report dealing principally with public-school classes for blind children. Estimates of the number of blind individuals in the United States are given, and topics such as the origin, growth, administration, and supervision of day-school classes; teacher qualifications, and salaries; pre-school care; health and social adjustment of blind children; and higher education, placement, and follow-up are discussed in general terms. A list of recommendations is appended.

Thomas, Margaret Owen, "Monroe's Standardized Silent Reading Test," *The Teachers Forum,* II, May, 1930, pp. 6-8.

This article describes a tentative adaptation for the blind of Tests I and II, Forms I and II, of the Monroe Standardized Silent Reading Test, Revised.

Tynan, Maurice I., Holmes, E. T., and Greenlaw, K. F., "Adequate Provision for the Blind Feeble-Minded," (Report of the Committee of Executives of State Commissions and Associations for the Blind), *Outlook for the Blind,* XXII, September, 1928, pp. 34-37.

This report recommends that educable blind feeble-minded individuals be trained in special schools of their own, special departments of institutions for the seeing feeble-minded, or as a last resort, in special classes in institutions for the blind. Permanent custodial care should be provided for all non-educable cases.

Villey, Pierre, *La Pédagogie des Aveugles,* Librairie Félix Alcan, Paris 1922. 304 pages.

Professor Villey discusses in this book the principles underlying the education of blind children and the special methods employed. Chapters IX and XI, dealing with professional training and the recruiting of teachers, are of particular value. The book generally is based upon faculty psychology.

Wallin, J. E. Wallace, *The Education of Handicapped Children,* Houghton Mifflin Company, Boston, 1924. 394 pages.

A brief discussion of the education of visually handicapped children is included in this book (pages 118-122). A short historical sketch on the education of the blind is given on p. 10, and descriptions of embossed print and of Clear Type may be found on pp. 11-13.

West, Bessie Brooks, *Report of an Experiment in Nutrition at the California School for the Blind,* Bulletin No. D-2, California State Department of Education, Division of Special Education, Sacramento, California, 1930. 35 pages.

A detailed report of an experiment to secure better nutrition among girls at the California School for the Blind. The investigator concludes that proper nutrition resulted in a marked improvement of the physical condition of the children and a gain in spontaneous activity, and that it is possible to secure well-balanced meals under the supervision of an intelligent dietitian at a per capita cost of approximately 25 cents to 28 cents a day.

West, Bessie Brooks, "The Cost and Nutritional Effect of Making An Institutional Diet Palatable," *American Association of Instructors of the Blind Proceedings,* 1930, pp. 556-561.

A condensation of the report listed above in this bibliography. Fundamental data are retained but tables and other details are omitted.

World Conference on Work for the Blind, American Foundation for the Blind, Inc., New York, 1932. 558 pages.

A compilation of papers presented by delegates to the World Conference on Work for the Blind held in New York City during April, 1931.

Many countries are represented, and such topics are discussed as: the pre-school blind child; general education and vocational training; higher education; teacher training, etc. These discussions are valuable because they reflect the points of view and practices of various countries.

II. REFERENCES DEALING PRIMARILY WITH SIGHT-SAVING CLASSES AND THE PREVENTION OF BLINDNESS

"Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection,* The Century Company, New York, 1931. 365 pages.

See Part I of this bibliography for complete annotation. Some statistics upon partially seeing children are included in Section III F, pp. 231-245.

Childs, Frank A., "Where Special Class and Normal Pupils Go to School Together," *The Nation's Schools,* IV, December, 1929, pp. 37-44.

A description of the Pearl School in Jackson, Michigan, built with the idea of making it possible for handicapped children to associate with normal schoolmates. The plan illustrates the coöperative system upon which the majority of sight-saving classes are organized.

Coffin, Helen; Brockway, Ruth; Hartman, Harry; Laing, Martha; Strom, Jennie; and Ware, Mildred, "Social Education of Blind and Sight-Saving Class Pupils Attending the Public Schools of Cleveland, Ohio," *Outlook for the Blind,* XV, Autumn, 1921, pp. 126-129.

This report suggests means for promoting the socialization of pupils enrolled in Braille and sight-saving classes in Cleveland, Ohio. Some of the activities mentioned are: scout work, games, plays, dances, cultivation of everyday courtesies, and conducting a library hour in the town library.

Coffin, Helen J., and Peck, Olive S., *Sight-Saving Classes in Cleveland Public Schools,* Division of Board's Publications, Cleveland, Ohio, February, 1926. 68 pages.

This publication describes the sight-saving program in Cleveland, Ohio. The aims of sight-saving classes are stated, and necessary equipment and methods of teaching are discussed. Estimates of the cost of equipping and maintaining sight-saving classrooms also are presented.

Dunlop, Gladys L., "Organization of Sight-Saving Classes," *The American School Board Journal,* LXXXIII, August, 1931, pp. 34-35; also reprinted in *The Sight-Saving Review,* I, December, 1931, pp. 42-47.

The author discusses the organization and equipment of sight-saving classes, outlines admission standards, and stresses the importance of special training for teachers. This article should prove to be particularly helpful to administrators contemplating the establishment of classes for partially seeing children.

Hadley, Hazel, and Hathaway, Winifred, *Sight-Saving Classes: Their Organization and Administration,* Publication 30, National Society for the Prevention of Blindness, Inc., New York (Second Edition), 1929. 35 pages.

This pamphlet is designed primarily to meet the needs of school officers who may be contemplating the establishment of sight-saving classes. It discusses principally administrative problems such as: determining the number of children eligible for sight-saving classes; ocular and educational supervision; teaching personnel; equipment, costs, and financial support; and the practicability of sight-saving centers to serve rural communities.

Harper, C. A., *Prevention of Blindness in New-born Babies,* (Report by the Standing Committee on Conservation of Vision), Publication No. D 63, National Society for the Prevention of Blindness, New York, N. Y., 1930. 22 pages.

This is a report made by the Standing Committee on Conservation of Vision of the Conference of State and Provincial Health Authorities of North America. The results of a questionnaire study are presented showing the use of prophylactics in the eyes of new-born infants by health departments and maternity hospitals in the United States and Canada. Statistics also are given indicating the decrease of ophthalmia neonatorum as a cause of blindness among pupils in schools for the blind in the United States.

Irwin, R. B., *Sight-Saving Classes in the Public Schools,* Harvard Bulletins in Education, VII, Harvard University, Cambridge, Mass., November, 1920. 31 pages.

One of the earlier publications describing sight-saving work in the public schools. The history and aims of sight-saving classes are given, and the necessary equipment for these classes is described. The need of effective vocational guidance for partially seeing pupils is advocated.

Kerr, James, *School Vision and the Myopic Scholar,* George Allen and Unwin, Ltd., London, England, 1925. 159 pages. (Available also from the National Society for the Prevention of Blindness, New York).

This publication is intended to serve as a handbook for teachers and school workers interested in the conservation of vision. The anatomy, physiology, and common defects of the eye are described, together with a simple discussion of optics. Reading, writing, and drawing receive special consideration from the standpoint of eye strain, and the concluding chapter deals with the general management and work of the sight-saving class. The somewhat awkward literary style makes the reading of this book rather tedious, although the information contained therein is valuable.

Lawes, Estella, *Methods of Teaching Sight-Saving Classes,* Publication 28, National Society for the Prevention of Blindness, Inc., New York, 1926. (Revised, 1931) 60 pages.

This manual describes methods of conducting and teaching sight-saving classes, and should prove to be a valuable source of information for teachers interested in this field. Details are presented for the adaptation of various school subjects to the special needs of partially seeing pupils.

Lewis, F. Park, *What Every One Should Know About Eyes,* Funk and Wagnalls Company, New York, 1928. 70 pages.

A clear non-technical discussion of the eye and its diseases, and simple rules of ocular hygiene with which the layman should be familiar.

May, Charles H., *Manual of the Diseases of the Eye: For Students and Practitioners.* (Thirteenth Edition, Revised), William Wood and Company, New York, 1930. 458 pages.

A standard work on ophthalmology of value to the student or general practitioner desiring technical information regarding diseases of the eye.

Meyer, George F., "Public School Classes for Children With Impaired Vision," *American Association of Workers for the Blind Proceedings,* 1925, pp. 48-62.

The author classifies visually handicapped children who need special educational attention, and discusses aims, equipment, and methods of teaching them. He points out that the child with permanently low vision is not receiving due consideration. Attention also is called to the fact that classes for children with defective vision may be developing too rapidly to be thoroughly sound.

Myers, Edward T., *A Survey of Sight-Saving Classes in the Public Schools of the United States,* Publication 64, National Society for the Prevention of Blindness, New York, 1930. 105 pages.

The material in this pamphlet was presented originally in partial fulfillment of the requirements for the Ph.D. degree in education at the University of Pennsylvania. It is a survey of sight-saving classes in the public schools of the United States, the information being based upon replies to questionnaires by 220 teachers of sight-saving classes. Although certain of the data are admittedly incomplete, as a result of the somewhat indefinite phrasing of a number of the questions, they constitute the most comprehensive source of information concerning sight-saving classes available in 1930.

Posey, William Campbell, *Hygiene of the Eye,* J. B. Lippincott Company, Philadelphia, 1918. 344 pages.

A discussion of the structure and function of the eye and the prevention and treatment of ocular diseases which can be understood by the average reader. The concluding chapters dealing with the education of blind children should be revised.

Royer, B. Franklin, "Public Health Aspects of Prevention of Blindness," *American Association of Workers for the Blind Proceedings,* 1927, pp. 159-166.

A sane treatment of the social aspects of the prevention of blindness with special reference to venereal diseases.

"The Partially Seeing" (Section III F) *Special Education: The Handicapped and the Gifted* (A Publication of the White House Conference on Child Health and Protection), The Century Company, New York, 1931, pp. 115-240.

The most recent and comprehensive information concerning sight-saving classes in the public schools of the United States is embodied in this report. Among the topics discussed are: definition of visual defects; ratio of sight-saving pupils to total school enrolment; admission requirements; pre-school testing of eyes; general ophthalmological service; qualifications, training, and salaries of teachers; and promotion rate of sight-saving class children. Recommendations and problems needing research are listed and an unannotated bibliography is appended. Considerable material is adapted from *A Survey of Sight-Saving Classes in the Public Schools of the United States* by Edward T. Myers.

Wallin, J. E. W., "The Ratio of Candidates for Sight Conservation Classes," *School and Society,* XXXIII, January 10, 1931, pp. 65-68.

A severe criticism of present practices in conducting sight-saving classes. The writer calls attention to the marked variations in standards of admission to such classes and criticizes methods used in locating candidates for them. In his opinion the future progress of sight-saving work will depend upon improved techniques resulting from scientific research, unhampered by personal prejudice.

Wood, Thomas D., *Conserving the Sight of School Children,* Publication 6, National Society for the Prevention of Blindness, New York, N. Y., 1929. 56 pages.

This report presents data on the importance and extent of defective vision among children enrolled in various schools systems of the United States. A very clear description and diagram of the eye, methods of testing vision, and suggestions for conserving sight also are included.

INFORMATION CONCERNING SOURCES OF REFERENCE MATERIAL

1. *Proceedings of the American Association of Instructors of the Blind*
   The biennial report is not published at a permanent location. For information apply to:
   American Foundation for the Blind, Inc., 125 E. 46th Street, New York, New York.
2. *Proceedings of the American Association of Workers for the Blind*
   These proceedings have not been published regularly. For information apply to:
   American Foundation for the Blind, Inc., 125 E 46th Street, New York, New York.
3. *American Journal of Psychiatry*
   The Johns Hopkins Press, Baltimore, Md.
4. *British Journal of Psychology*
   Cambridge University Press, London, England; University of Chicago, Chicago, Illinois.
5. *Canadian Council on Child Welfare Publications*
   Canadian National Institute for the Blind, 186 Beverley Street, Toronto, Ontario, Canada.
6. *Edinburgh Medical Journal*
   Oliver and Boyd, Tweeddale Court, 33 Paternoster Row, London, England.
7. *Educational Method*
   Bureau of Publications, Teachers College, Columbia University, 525 W. 120th Street, New York, New York.
8. *Journal of Applied Psychology*
   Williams and Wilkins Company, Baltimore, Md.
9. *Journal of Educational Psychology*
   Warwick and York, Inc., Baltimore, Md.
10. *Journal of Experimental Psychology*
    Psychological Review Company, Princeton, N. J.
11. *Journal of Genetic Psychology*
    Clark University Press, Worcester, Mass.
12. *L'Année Psychologique*
    Librairie Felix Alcan, 108, Boulevard Saint-Germain, Paris, France.
13. *Outlook for the Blind*
    American Foundation for the Blind, Inc., 125 E. 46th Street, New York, New York.
14. *Research Bulletin of the National Education Association*
    Published by the Research Division of the National Education Association, 1201 Sixteenth Street North West, Washington, D. C.
15. *School and Society*
    The Science Press, Grand Central Terminal, New York, New York.
16. *The American School Board Journal*
    The Bruce Publishing Co., New York, New York.

17. *The Beacon*
National Institute for the Blind, 224-226 Great Portland Street, London, W. 1, England.
18. *The Journal of Expression*
Expression Company, Publishers, Harcourt at St. Botolph, Boston, Mass.
19. *The Lancet*
The Lancet, Limited, 423 Strand and 1 Bedford Street, Strand, County of London, England.
20. *The Mentor* (out of print)
Was published by the Alumni Association of the Perkins Institution for the Blind. For information apply to:
Perkins Institution and Massachusetts School for the Blind, Watertown, Mass.
21. *The Nation's Schools*
The Nation's Schools Publishing Co., Chicago, Illinois.
22. *The Sight-Saving Class Exchange*
National Society for the Prevention of Blindness, 450 Seventh Avenue, New York, New York.
23. *The Sight-Saving Review*
National Society for the Prevention of Blindness, 450 Seventh Avenue, New York, New York.
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American Foundation for the Blind, Inc., 125 E. 46th Street, New York, New York.
25. *The Teacher of the Blind*
The College and Association of Teachers of the Blind, 224-226 Great Portland Street, London, W. 1, England.
26. *The Training School Bulletin*
The Training School, Vineland, New Jersey.
27. *The Vocational Guidance Magazine*
The Bureau of Vocational Guidance, Graduate School of Education, Harvard University, Cambridge, Mass.

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